HISTORY OF ART IN ANTIQUITY

VOLUME VII

HISTORY OF ART IN ANTIQUITY

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GREECE OF THE EPIC PERIOD

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HISTORY OF ART IN ANTIQUITY.
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Greece of the epic period.
Chapter I.
General Characteristicr of Grecian Civilization after the Do Dorian Invasion until the middle of the eighth century B. C.

I. History.

In the first part of this history of Grecian genius, we have already had occasion to give the names of the principal groups that appeared to the ancients to form the natural divisions of the Grecian race. We have mentioned the Achaians, Ionians , Aeolians and Dorians; we shall frequently have occasion to mention them again as so many families also distinguished from each other by certain peculiarities of temperament and customs, and by differences of the dialects spoken by them. While taking into account the original predispositions of those different groups, in descending the course of the centuries we shall see these shades gradually effaced; but before they have entirely disappeared, the moral unity of the Grecian world, that only one which it ever established, will have found its sensible expression in the name of Hellenes, which is claimed with pride by all that believe they have some right to bear it. We saw th this name originate under the forest of oaks that sheltered the sanctuary of Dodona, and because it responded to the intimate and secret consciousness of ethnic relationship, it gradually extended and ended by being applied to all the elements composing the nation, to those living molecules, that seem at the same time to repel anf to attract each other.

Curious and subtle as it was, the Greek mind attempted to harmonize, two facts that seemed contradictory; on the one hand the ideal unity, whose visible sign was this same name of Hellenes, and on the other, the diversity of fixed characteristics transmitted from generation to generation in those different alliances of tribes and cities. One may relieve himself from embarrassment by a procedure, on which we shall rely for many other applications to the problems of the same order. Of all relations that can exist between men, the simplest is that establishing a bond of consanguinity between persons descended from a common ancestor. Then is imagined an entire genealogy, and

Hellen is invented, who is given as the son of Deucalion, tha t alone by the protection of the gods escaped the destruction of the human race. Hellen thus found himself the father of the entire new mankind, that peopled the land recovered from the deluge, or at least the portion of the earth where wa established the selected race. Ion, Aelos, Acheos and Doros were the sons or grandsons of Hellen. [1]

Note 1.p.2. What proves the slow fabrication of these geneologies are the variations, that they present, according to whether they come from an Attic or a Dorian source. The Attic version assigns to Ion a sort of elder right, which is elsewhere attributed to Doros. Eurip. Ion. 1 - 82, 1581 - 1594; Strabo, VIII. 7. 1. In the geneology proposed by Strabo, he makes no mention of Aeolos.

The conventional character of these combinations, that did not know Homer, is betrayed as soon as one recedes to the most ancient and most sincere forms of the tradition; in fact that assigns an importan part to peoples, that have no place marked in this scheme, because they disappeared early, after having taken a great part in increasing the value of the soil and in the creation of the industries necessary:- such as those Cretans who founded in the Archipelago the maritime empire to which the name of Minos has remained attached; such as the Danaians of the Argolis, the Minyans of Orchomenos and the Cadmians of Thebes; also such as the Epeans and the Taphians that the Odyssey places west of the Peloponessus and in the neighboring isles. For a stronger reason the Pelasgians, seen in the distance of the prehistoric ages, as the primitive basis of the aboriginal population, remain outside that classification, like those nameless peoples whose existence is revealed to our curiosity, on the coasts of Asia Minor and in the islands, by the remains of entirely primitive tools preserved to us in the tombs.

If from the time of Herodotus and of Thycydides there was but a single Greek community, which was not attached to one of the four stocks into which were divided the descendants of Hellen, that is the result of a twofold work, which operated in the s same things by the effect of the struggle for life, and what was later undertaken by the poets and early historians. On the one hand, favored by circumstances, certain tribes are found to plaw the first parts; their dialects were fixed in beautiful

works and had the chance to become literary languages; their myths had escaped from the narrow limits of the district where they were born; they had borne very far the worship and images of the gods, that were their heros. The states founded by those privileged tribes had subordinated the heterogeneous elements, found in the entire extent of the circle in which their influence was exerted. Around Miletus and Ephesus were soon only Ionians, although the coast extending from the mouth of the Hermos and that of the Meander had received immigrants from all points of the European continent. The work of reduction thus commenced continued by the thoughtful effort of all those, who applied themselves to placing in order all the confused multiplicity of facts, and of piercing wider avenues through the forest of traditions; when they found on their path a city not yet classified, they arranged to add it to one of those groups, by connecting them to others by threads ingeniously crosse, myths that primitively had no relation between them.

From the Dorian invasion of the first olympiads, i.e., about from the year 1000 t the year 750, one is still far from the epoch when those spontaneous groupings and those systematic views had simplified the appearance of the Grecian world. That appearance must be very complex in the age succeeding the fall of the Achaian kingdoms; but nothing is more obscure than the history of those two or three centuries. When the historians of the classic age attempted to reestablish for that period the sequence of facts, they could only invoke oral tradition, and that is always subject to suspicion. Of written documents dating from that time, such as lists of priests and of eponymous magistrates, laws and treaties, nothing exists. At earliest about the year 800 men commenced to apply the letters of the Phoenician alphabet to the sounds of the Greek language, and many years were necessary from the point a which was made this first attempt, for the marvellous invention to be diffused in the rest of Greece, for the practice of writing to enter into current use. If one sets aside some proper names incised in the sides of the rocks in the necropolises of Thera, we have no inscriptions, that appear to date beyond the 7 th century, and the Grecian cities must scarcely have preserved authentic monuments that could have a higher antiquity.

From that period date the two great poems, in which is summ-

summarized for posterity the creative work of epic genius. On e might then be tempted to believe, that he has a chance of find - ing in the iliad and the Odyssey indications vainly sought else- where relating to the subject of the number and the extent of the principal states of Greece, of their relative importance and of the relations sustained between them, and the most not- able events of which they had been the scene. These hopes are not realized by the epics. Doubtless in episodes like the list of the ships, there is more than one fact useful to collect; but as the ancients had already recognized, these lists suffered retouchings on several occasions, that permit their evidence to be invoked only with extreme reserve. For what there is of the tale, it is difficult to find any allusions to events of the c contemporary personages. Nothing recalls the Dorian invasion, the movements and displacements for which it gave the signal, the new conditions in which it placed Greek society. One can- not be surprised by the affairs of the men of the present do not appeal to the imagination; that is even but moderately in- terested in the past of yesterday, a past whose witnesses st- ill live or have but just died. For free play, there must be r recoil. That is the case especially for the epic period. Every great epic poem is the testament of a world that has completed its work, of a vanished world. What is reflected in the Homeric epic, as understood since Schliemann has exhumed Troy, Tyrins and Mycenae, is the Achaian world with the fame of its power- ful sovereigns, the memory of their warlike prowess, of cities girdled by high walls in which they led a royal life, of the treasures that they hoarded in their castles. In the distant and glorious past the Aedes seek their heros, just as the trou- badours of the 11 th and 12 th centuries in the full feudal re- gime demand theirs from the impressions left in the memory of the peoples, of the grandeur and splendor of the Carlovingian empire. The song of Roland and all the heroic poems of the same cycle explain to us the Iliad and the Odyssey.

What complicates the task of the historian is, that for this period nothing is to be expected from the aid of archaeology; excavations are far from providing supplementary information as rich as for the preceding age. Among all those commotions art seems to have retrograded rather than advanced; in any case it became much less original and less fertile. One or two centuries

must have passed before Greece recovered its equilibrium, after having been profoundly disturbed by the abrupt invasion of the armed bands, that came from the high mountains of the North to throw themselves into the Peloponessus. To maintain themselves in their conquest, the chiefs of these armies first of all counted on the strength of their arms. Their feeling was later expressed by a celebrated verse of the poet Alcman, concerning that Sparta which had no fortified walls when it was in full decadence:--

"Men with hearts are the surest rampart of a city."

The Dorians scorned to shut themselves up behind walls. They despised luxury; the painter no longer had a palace to cover with his frescos, and the ceramist had seen his patrons restrict themselves, whose commands aroused him to vary his subjects. They no longer required the sculptor to chisel funerary steles, and beautiful vases of gold and silver decorated by human figures; no more proud symbols were to be patiently engraved in metal, jasper and sardonyx, for the bezels of princely rings. All these artists, for whom opportunities of exerting themselves became more rare, forgot their vocations; then so to speak, they left nothing that can profit the curiosity of the historian. There are no longer found here those statuettes and reliefs, that come in such great numbers from the tombs of Amyclea and of Mycenae, all those works of sculpture, which if they do not give the names and histories of the chiefs to whom they belonged, at least inform us what homage was rendered to the gods, what vestments were worn by men and women, what game they pursued in the chase, and what equipment they carried to the combat. These representations of figures, this vision of the actual life, is what is lacking to us for the society, which succeeds what we have called primitive or of Mycenaean Greece.

Not on the epic period can one count to fill this gap. Doubtless it did not develop and assume form till after the migration, among the Aeolians and the Ionians of Asia Minor, around Smyrna and at Chios; but if it was on the eastern shores of t the Egean sea, that the poets created the figures of Trojan heros, of Priam, Hector, Paris and Sarpedon, it was to continental Greece that belonged all the Greek heros, Agamemnon, Menelaus, Nestor, Achilles, Ajax and Ulysses. In the Pelaponnessus and in Thessaly men commenced to celebrate their prowess, and

in Thessaly men commenced to celebrate their prowess, and in t those tales of war and adventure, that lengthen and become complicated, they have always retained the arms, vestments and attitudes lent to them by the first Aedes, in spite of all the r retouchings suffered by the original themes. This was a sort of local color, that by a natural and just feeling of the needs of poetry, the poets endeavored to retain faithfully; it charmed by taking from home the imaginations of their auditors. In time there is introduced in these tales more of a trait borrowed f from later usages, in arms and costume, in all the additions of the generations that have seen the work, completed by the formation of the two great poems to which is attached the name of Homer; but the old basi has no less remained, even in the decorations, if it be not always easy to distinguish, what the poet received from his distant predecessors and what he has taken from the scenes of his own time.

Oral tradition, as it is transmitted in the Grecian cities, then remains the only source from which could be derived in the course of the succeeding age the elegiacs and the lyrics, that in their poetry, entirely circumstantial and actual, make such frequent allusions to the fast, then a little later the early historians, who strove to group in a general representation all the statements, that they succeeded in collecting, by requesting from each city and each Grecian tribe the memories, that they had retained of their most ancient princes, the migrations that had led into the district occupied by them, and the struggles that they had sustained against their neighbors. There could not fail to be many gaps in the information so collected, and on the other hand the testimonies of all these witnesses could not always agree. Herodotus transmits to us the results of his inquiries, but is frequently the first to point out that there are contradictions in the words of those questioned by him, on the subject of the same event, but in different cities.

If the fact of the Dorian invasion does not appear to afford a doubt, if the study of the monuments of art tends to confirm the veracity of the traditions, that Greece had preserved on this subject, we know almost nothing of the conditions in which was carried out the occupation of the country. We are ignorant of the incidents of the struggle and how long it lasted. What

one divines is that the invaders, as well as the vanquished, who by necessity in their turn became conquerors, employed long years in settling and establishing themselves in the new homes, that they no longer must leave; this was a clow work of adaptation and settlement, whose incidents varied much according to the places and the times.

Even in the districts of the Peloponessus into which the Dorians cut their way at the point of the sword, their ascendency was not made to be felt everywhere with the same energy. In many places, the immigrants were either less numerous than in other districts, or the ancient inhabitants remaining in the country had resisted better, and affairs continued to follow nearly the same course as in the past. There is a certain city like Corinth, which seems to have been scarcely affected; life did not fail to resume there its former charm, the character t that it had from the site, or that was developed from its entire past. The Angolis was the first province invaded, the lot of honor assigned to the eldest of the descendants of Hercules; yet also there the primitive people quickly raised their heads; There is reason to believe that the old Achaian cities, like Tiryns and Mycenae, preserved their independence, very near t the Dorians grouped at Argos, around Larissa, the high citadel dominating the entire plain. The Dorian city in particular in the peninsula was Sparta, that the masters of Laconia founded on the bank of the Eurotas, above Amyclea, which had until then been the largest city in the valley. There were manifested more clearly than elsewhere the qualities and propensities, that one mentions as the distinctive mark of the Dorian genius, a brilliant courage, always subject to a strong discipline, the love of order and rule, the docility with which the individual subjected and sacrificed himself to the State, and solidity of an intelligence firmly attached to tradition, mistrusted novelties and but slightly aspired to progress, tendencies that about the end of the 9 th century found their expression in what are called the laws of Lycurgus. Crete saw established analogous institutionsin those of its cities, such as Cydonia, Cnossos and Lyctos, where the Dorian bands, who were scattered in the island, were sufficiently in force to cause their customs to prevail.

Protected by their mountains, the Arcadians had retained their

freedom. Of all the villages in which they were distributed, only one rose early to the rank of a city, which was Tegea; that by the fertility of its plain acquired sufficient importance to arrest the ambition of Sparta, when that menaced Arcadia. A province that seemed more exposed to the covetousness andthe attacks of its neighbors was Elis, the portion of the Peloponnessus containing the greatest extent of cultivable lands. It was saved by the abilities of the princes of the Achaian and Eolian races, that reigned at Pisa and at Elis; they k knew how to profit by an antique sanctuary of Zeus and of Hera, that passed for having been founded by Pelops on the site later celebrated under the name of Olympia; they instituted there public games, that were frequented by the in abitants of the neighboring districts, and to which men came from increasing distances, as their reputation extended; this was already made before the name of Coroebos came to be inscribed at the head of the list of winners in the foot races. Entire Elis benefited by the prestige of the deities and of the festivals of Olympia; it became a sort of sacred territory, that rarely had to suffer the ravages of war, and the lower valley of the Alpheus, where the piety of believers accumulated votive offerings, as one of the places toward which we shall be most frequently brought in the course of of our researches. On the other side of the gulf of Corinth similar conditions and politics ensured the independence of the little sacerdotal State of Delphi, the religious cap tal of the restricted Hellas, that from the course of the Achelous extends to Thermopylae and even to the point of Attica; the same wealth accumulated as at Olympia.

Since they had extended beyond the excess of their population, the Beo ians applied themselves to increase the value of their soil, and that task was facilitated for them by the labors already executed by their predecessors, the oriental colonists of the Minyens of Orchomenos. There in the bosom of ansedentary a and laborious community, was to be born the poetry of Hesiod about the end of the 9 th century. That poetry represents the first effort of reflection, the first attempt made by the Greek mind to judge of life, to condense in the form of proverbs and precepts the results of experience, the fruit of a wisdom that already had its bitterness, however young it might be.

The neighboring province of Attica seems later; it is not yet

ready to take the brillian initiative reserved by the future; bu already that future was preparing. The iavasions had not conquered Attica; they had obtained over it no effect other than to supply its people the aid of choice elements, Ionians expelled from Peloponnessus by the Dorian spears, great Achaian and Eolian families, who brought with them the memories of their power and of their warlike prowess, sung by the poets. Thanks to these reinforcements, Attica prospered in spite of t the poor soil, by the stubborn labor of those cultivating it. What was lacking to them, they easily obtained from outside; the peninsula terminated by cape Sunium extends well among t the Cyclades and is nearer Asia Minor than any other part of the coast of European Greec. The country had only had at first villages, that were founded by men of very varied origin, and lived as strangers to each other; then it had a dozen market t towns that assumed greater importance with their castles where resided the chiefs of the noble families. Between the districts was war for a long time, until the time that peace was established, due to the predominance acquired by the principal market town of the valley of the Cephisus, that under the name of Athens has held such a great place in the history of mankind. It had the advantage of occupying a location best chosen, at equal distances from the strait of Euboea and the frontier of Megara; but what gave it particular strengthwas an isolated rock, that its height and the steepness of its sides destined to bear a fortress that should command the entire plain. A wall had been built only around the plateau, that one reached only by stairways and ramps easily defended. The princes of the family of Erechtheus, who had fixed their residence there, felt themselves impregnable there; their supremacy ended in being so well recognized, that all the inhabitants of Attica were accustomed to turn their eyes toward the city formed at the foot of that citadel to regard as their political and religious capital. Each district had retained its particular religion, some of which like that of Eleusis, were adopted by the native people; but the great national festival was that celebrated in the capital in honor of Athena, in that Acropolis where the goddess occupied the first rank beside the other gods, who also had their altars there, like Zeus the protector of the city, and like Poseidon, dear to the entire Ionian race. The Panathenaea

was the visible and solemn consecration of that unity, which was slowly constituted, never to be broken henceforth. To a hero by the name of Theseus, tradition attributed the honor of having created that unity; it gave him adventures and exploits in which the marvellous plays such a part, that it is truly difficult to see a historical personage in the Theseus, who by the incessant labor of the poets became the Athenian Hercules, a replica of one of the types dearest to the Grecian imagination. Yet under that growth of fables, one divines an entire series of combats between the petty local dynasties, of victories of the lords of Athens, of affairs ending in the creation of a State in which dominated Ionian blood. This State appeared in very limited dimensions, and yet there was not in the entire Greek world, where was grouped around a single city without a peer by universal consent, a number of men so important, all citizens of the same city, where were their homes, that they either found in the capital itself or on the frontiers of the territory. This was one of the most original characters of the Attic State and one of the secrets of its power.

In Asia Minor was no compact State created by these Ionians, most of whom came from the harbors of Attica. The bands of immigrants had landed, each at its own time, on different parts of the Asian coast, some in Lydian lands and others in Carian lands. There were founded as many distinct cities as there had been bands of immigrants and favorable sites. Even the form of he ground seemed to predestine those cities for a separate existence. The country separa ing them was intersected by deep valleys and by high mountain chains; those at the approach to the shore opened like the fingers of a hand, and ramified in divergent spurs; thus several cities inserted between these a abutments had no easy relations wit their neighbors, except by sea. A federative alliance was established; they had national festivals near a common temple on the promontory of Mycale; they sometimes aided each other, at first to repulse the attacks of the Carians, at the expense of whom these colonies extended their suburbs, and later to resist the king of Lydia and the Persian satraps; but the cohesion was never very strong; each city followed its own course and had its own for unes. Some, like Magnesia of Sipyle and like Ephesus, by the effect of the situation occupied or the special character of their religion,

entertained closer relations with the inhabitants of the interior of the country; others like Phocea and especially Miletus, devoted themselves with enthusiasm to maritime commerce, and only labored to extend and multiply themselves outside by founding numerous agencies scattered over distant countries. Life here was then extremely active and varied. In the contests it was necessary to support against in order to appropriate for themselves a piece of the territory possessed by the aborigines, minds were hardened, nothing was better to raise them and keep them on the alert than this abrupt entrance into the unknown, than the sudden appearance of the oriental world seen in the background, either at the ends of the valleys descending from the plateau, or on the distant coasts of the Black sea to the sea of Cyprus, that they were greatly emboldened to reconnoitre, and where all was discovery and surprise. Thus one cannot be astonished that such surroundings saw arise the first fruits of Grecian genius that reached maturity; There in the Eolian and Ionian colonies epic poetry had that full and brilliant growth, whose final flowering left for the admiration of posterity two masterpieces, the Iliad and the Odyssey.

2. Religion.

"Hesiod and Homer," says Herodotus, "were the authors of the first theogonies, who assigned to the gods their names, distributed them among honors and functions, and fixed the features of their figures."[1] Herodotus exaggerates; the part of Hesiod a and Home in the development of Grecian mythology is certainly less important than he asserts; but he has reason to recognize in those poems hre most ancient collection of documents, from which one can seek how the Greeks have placed the question of human destiny, of the origin of thangs and of the aim of life. What forms the superior in erest of this poetry is that one finds ther , sometimes implied by means of illusion, sometimes presented under the transparent veil of myth, conceptions very diverse and sometimes contradictory, that are added and s superposed on each other, without excluding each other, and w without the late comers neutralizing those preceding them. The Homeric mythology, it has been said, is faded mythology. In fact, many myths found there evidence the moral preoccupation and labor in reflection, which are already far from the first spontaneity; but under the superficial layer is discovered,

that when one sounds what a geologist terms the most ancient f formation of the earth, the accumulated deposits of the intellectual labors of a long past, metaphorical expressions, whose sense was lost while they still remained in current use, fables that appear fantastic or puerile, gods decayed or dead, rites more or less struck with desuetude. From Homer to Pausanias is far, and this past that never resigned itself to perish, still betrays itself on nearly every page of the book in which the traveler of the second century of our era describes the infinite diversity of the sanctuaries of Greece and of their divine images, where he mentions those local religions, that have not been destroyed by the concurrence in a common religion by the entire nation, and where he stops before the strange and almost formless images, that remain standing on their pedestals, at a few steps from a Hera of Polycletes, of an Athena of Phidias, or of an Aphrodite of Praxiteles.

Note 1.p.11. Herodotus. II. 153.

By connecting all these indications, we shall attempt to comprehend in its entirety the evolution of the Grecian genius, from the confused impressions that it experienced at first before the sight of the universe, until the last term of the fruitful effort of thought, that gave birth to the great gods of hellenic Olympus. One cannot study the history of Greek art without attempting to define the character of this religion, whose dogmas it has expressed with so much power and magnificence, starting from the day when it was no longer emberrassed by the difficulties of execution.

Of all the nations of antiquity, the Grecian with the Egyptian are those that allow the historian to go back farthest in the life of their perceptions and imaginations. Besides, the curiosity of modern science, when it attacks the problem of t the origins of civilization, often finds itself in presence of monuments that leave without reply the most interesting questions, that one may attempt to address to them. It is in vain to turn over in all directions the articles of stone and of bone, that fill the cases of our museums, they tell us nothing, and we shall never learn what names the inhabitants of the caves gave to their gods, and what idea they formed of them. On the contrary in Egypt from those thousands of inscriptions translated for us by the pupils of Champollion, there issues

a voice that has neither its tone nor accent, words whose meaning is still explained by the paintings, that are like illustrations of the hieroglyphic text. Those words, the most ancient ever entrusted to writing, after five or six thousand years have elapsed, have just revealed to us the faiths and hopes of those men of old, of those that according to all appearance were the first to form a civilized society.

Greece has not the same privilege. Writing was only introduced there very late. The oldest monuments of its sculpture, not being explained by inspriptions, tell us nothing of its religion; but for it the Hellenic epoc alone atones for that disadvantage. What that poetry expresses are the ingenuous emotions and naive judgments of an adolescent people, who without having yet forgotten the dreams and the games of its infancy, already feels the ardors of youth, and arouses itself to its noble anxieties of spirit. To fulfil that office, it has at command a language, that thanks to the superiority of its processes of derivation and composition, gives to the image a clearer contour and to the idea more precision, than the Egyptian language could do with its far more elementary mechanism. The Egyptian prosoynemes of the Book of the Dead, in spite of the trouble taken by Egyptologists to explain the formulas to us, are far from having the clarity of the Homeric epoch; this causes us to comprehend better what was among the Greeks the notion of the divine, and to what conception corresponded each of those superhuman personages, between which were divided strength and action.

The Grecian mind is further nearer our own than the Egyptian mind, and an uninterrupted tradition of learned culture connects the modern and ancient world. Although the intelligence of a man of the 19 th does not develop in the same conditions as that of a contemporary of Homer, there suffices for him an effort not exceeding his powers to understand the thoughts of the poet. What also aids him in that undertaking is the additional information that he owes to other documents, later but still very worthy of confidence. The lyric and dramatic poets have t taken the myths of the epic, while diversifying them. Among the variants that they introduced, there are some entirely due to their imaginations, while others, though not having been placed in the Iliad, Odyssey and the Theogony, yet also came from that

common fund, the legacy of the first ages, from which Homer d drew. A number of myths of as ancient origin have been preserved by later writers, by the Alexandrine poets, mediocre poets but very erudite, and by those polygraphs, who from the time of the Ptolemies to that of the Antonines and even later applied themselves to making an inventory of the fictions that delighted t the first fathers of their race.

The figured monuments furnish their part of the information. If the painters of vases borrowed their themes from these secondary epics, now lost, that were composed after the Iliad and Odyssey, and were known under the name of Cyclic poems, these poems had not that wise unity of the two masterpieces tha they followed, more easily allowed themselves to be divided into episodes, each of which furnished a subject for a painting. Some information of primary importance is also gathered from the inscriptions, those engraved on tombs, especially those belonging to the archive of temples! One finds there the local gods or at least epithets, surnames of the divinity mentioned by no w writer; these texts are the only ones tc make known some religion, whose strange rites they describe, that are faithfully transmitted from generation to generation from a very high aytiquity. Finally it is only till the study of the private and public imitations, that a very vivid light is cast on the birth and progress of the religious sentiment; it is known what results Fustel de Coulanges derived from that examination, in a book whose doctrine is prescribed in all memoirs, what a penetrating analysis he has given of the principles on which rest in the Greco-Roman world the family and then the city, which is only an enlargement of the family. Thus by this mythology of polytheism in which modern science stubbornly sought the primary beliefs of the Hellenic race, he knew how to attain the preceding states of perception and of thought, the truly primitive conceptions.

These conceptions are those that we have attempted to define with regard to Egypt, those commonly designated today by the t term fetichism or animism; that state of mind is what created the first explanation that man gave to himself of the mystery of nature and of life. His first movement everywhere is to represent to himself the world entirely peopled by voluntary forces, capricious and passionate, similar to the force that he

feels acting in his own bosom; he takes himself and projects himself everywhere into the external world. The universe is a seen confusedly in its perpetual appearance, as to him like t those floating masses of vapors, that on the peaks of the Harz return to the traveler his own image, sometimes repeated several times, sometimes diminished or enlarged. In the sun that ascends or which descends to the horizon, and in the lightning that gleams, in the fountain that dispenses around it coolness and fertility, in the tree that opens its leaves to the month of April, in the serpent that flees and rustles the dry plants, in the wild beast that attacks the flocks and the dog that guards them, man seeks and believes that he finds persons, free agents, some of whom are his enemies and the others are his f friends, his benefactors.

It is in the period when all souls are dupes of that illusion, that everywhere is born language, as attested by the considerable part that metaphor plays in it, and that not only in the poets, but also in the most clever prose; in Greece as elsewhere, human speech has assumed[1] its habits and ineffaceable bent in a mental regime that characterized "the flight of our primitive tendency to conceive all external bodies whatever, natural or artificial, as animated by a life essentially analogous to our own, with simple differences of intensity.

Note 1.p.15. Auguste Comte. Cours de philosophie positive. Vol. V. p. 30.

These beliefs have also left their traces in religion. Doubtless this is already no longer what inspired Homer and Hesiod, nor the architects and sculptors of the classical age; but besides that worship by which in magnificent edifices and before statues of gold and ivory, Greece honored her Olympian gods, more humble rites persisted obstinately, worship in which was not displayed the same pomp, but which perhaps had a stronger hold on minds, and to which the Grecian soul remained faithful for long centuries. There was then at first the worship of the dead, the primary foundation of the family and of the city, a mystic bond maintaining their cohesion. Its rites are perpetrated with a singular persistence, in a society whose theoretical ideas for many years have ceased to be in harmony with the hypothesis that implies the entire ceremonial. This hypothesis attributes to the dead, laid in the tomb, a life prolonged while

it is sustained by offerings. Man by this change of condition finds himself invested with a power the more formidable as it is badly defined; this hero or subterranean deity, as he is called, as he is honored or neglected, can cause the happiness or misfortune of his posterity. This living dead, who thus depends on his descendants, and who in return exercises on their terrestrial destiny such a sovereign influence, is the primary and the strongest of all fetiches, the one that it is most important to c nciliate his favor, and whose ange is most to be feared. It is again a fetich in the flame of the domestic hearth, and later that of the public hearth of the city, that flame that must never be extinguished except to be immediately rekindled, that pure and sacred flame on which is poured the libation of oil and fat that feeds its ardor; man addresses his prayer to it; asks from it wealth and health. When he can no longer conceive the divinity otherwise than under the form of man, with a body and a sex, he will personify that flame in the goddess Hestia or Vesta; [1] but he will never have myths of Hestia, as there are myths of Hera or of Aphrodite, and that difference suffices to prove that Hestia, so far as a concrete person, is not a contemporary of the group of great goddesses, daughters or sisters of Zeus, where she was introduced later. This is a delayed creation of the spirit of system. This had blossomed there, where had succeeded without effort that imagination still young and fresh, from which were born the other deities of Olympus; it did not know how to give individual features to the figure charged with representing in its pantheon the beneficent force, that men adored in the fire of the hearth that cooked t the food, and whose heat warmed the family seated around the s stone that supported it, at the centre of the habitation; the statues of the goddess are rare; none of them are ci ed that might be the work of artists of the archaic period. This because the worship of Hestia had retained its entirely primitive character. Not to the daughter of Chronos and Rrea, sung by Hesiod, but to the fire itself the Alcestes of Euripides addressed himself, when before leaving hi home, he desired to recommend to the protection of an all powerful deity the children, that he was going to leave orphans. [2]

Note 1.p.18. Homer frequentl alludes to the sanctity of the hearth (hestia); but he does not recognize Hestia as a divine

personage. The earliest mention of her is made in the Theogony.
Note 2.p.18. Euripides. Alceste. Verses 162 to 169.

The worship of the dead and that of the hearth are not the o only ones, that have retained the imprint, and continued the traditions of these primary beliefs, there are also those found in the homage rendered to the springs, rivers and trees. Then when art had given charming forms to what were called the nymphs of the forests and of the fountains, when it represented t the rivers with the features of robust old men with muddy beards, the head crowned by thick hair pierced by horns, the emblem of strength, the memory was always retained of the time, when as says the poet:-

"Each tree divine
Enclosed its dryad and its young sylvan,
Who shed in silence from his changed skin,
The sap in long drops under the rent bark." [1]

The inscriptions incised on the walls of the grottos where t the living water left the rock, the offerings cast into the basin, where it was heard to gush and murmur, the hair that young men and young girls cut off on the banks of the stream to abandon it to the waves, [2] the sacrifices by which they honored those sacred trees, and the votive offerings that were suspended from their branches, [3] all that dates from the distant period, when the spring, the river or the old oak beneath which shepherds and flocks sought refuge from the ardor of the sun of noon, was for the people of the vicinity a fetich, that those propitiatory gifts would decide not to cease to make the plain green, or to spread there the shade of its branches. Also what was adored in the powerful plant, whose youth was renewed each spring, was a fullness, a superabundance of life, that could pour it out on feeble mortals, whose infirmities were healed at the contact of that flourishing and indestructible health. The tree attracted to itself all the misfortunes of men, and delivered the latter from them. [4] This fetich tree, I have found several times on my way in Greece, Asia Minor and Syria, still surrounded by the same veneration as in the time of the Pelasgians or Hebrew patriarchs, still charged with the same functions. [1] In Bithynia I met with it for the first time. At the summit of a hill toward which ascended the path that our horses followed with slow steps, I perceived from afar an enormous tree, with a grea

trunk, a large and round head. As I approached, its appearance seemed to me more and more singular. Very little verdure, and only in the upper part; lower were spots of yellow and white, red and blue, I asked myself how a tree could bear at once flowers of all colors. I seized the solution of the enigma, when I arrived at the foot of the oak. Those many colored spots were rags attached to the branches, where they replaced the leaves; each of those tatters was a sign and memorial of a fever, when the sick person had come to rid himself of it, to tie to the tree; this was the expression employed. Some years later, I d discovered that the same superstition still existed in France. In a forest where I was hunting, in Champagne, I saw bits of w wool tied around the low branches of an old oak leaning over a fountain, and was told that this was a fairy tree, to which from all the villages around, persons came to ask for healing.[2]

Note 1.p.17. Fontanes, La foret de Navarre.

Note 2.p.17. Pausanias.VIII.41; Homer. Iliad. XIII.141.

Note 3. See Art. Arbores sacra by de Saglio in Dictionnaire des Antiquites Grecque et Romaines (Paris, Hachette. 4to), and the work of Carl Bötticher (Der Baumcultus der Hellenen, etc. 8vo. Widmanns Berlin). The book is full of facts; what are wanting are general ideas).

Note 4.p.17. It was especially to the laurel, that was attributed in antiquity this virtue of healing, and in what is said to us of the beneficent influence, that i was supposed to exert on the fields where it was planted, one finds the idea by which we explain the service, that one still today demands from the fetich tree. Here are two texts that leave no doub in that respect:-- (Greek quotation from Geoponica. V. 33, 4). (Latin quotation from Pliny. N. H. XVIII. 45).

Note 1.p.18. On the worship of trees among the Hebrews, see Histoire de l'Art. Vol. 1[m]. p. 379,380.

Note 2.p.18. This was more than 30 years since. It was in a warren located on the territory of Borbonne, a village of the district of Sezanne in the department of the Marne.

The imagination of the fetichist had such power, that it not only lent a soul to the animal and the plant, which approached man by the common attribute of organic life, but even to the inert and cold stone. We have mentioned the place occupied by the worship of betyles or sacred stones in the religions of

Syria and Asia Minor; [3] but this worship was also maintained in Greece, even after that art had peopled the temples with statues. To designate this kind of idols, the Greeks of this time often employed a word of Semitic origin, Baitylia, betyles (idol-stones). Thus in their early relations with the Phoenicians, they had heard these give this name of beit-el ("house of the deity") to the cone of stone that the devout Syrian merchant, when he had unpacked his goods on the shore, hastened to take from the side of his ship and to set up very near t this improvised bazaar, in honor of his goddess Ashtoreth, who had saved him from the peril of the sea. In the naive admiration that men experienced for those representatives of a superior civilization, they hung on their lips and appropriated t the word; but as for the thing, they knew it well before entering into relations with the Asians. Nothing more natural under the sway of the feticnist conception, than to attach and to entrust thus to the solidity of stone the conservation of a group of those divine energies, whose presence and mysterious action man feels everywhere around him, energies that he is bound to ensure their assistance, under penalty of being their sport and victim, if he does not succeed. Thus the Greek language has for for the naming of objects of this worship, besides the term of foreign origin, a phrase drawn from its own stock; It calls them unhewn stones, argoi lithoi.

Certain of these stones passed for having fallen from heaven, and men have thought to find in this circumstance the explanation of the superstitious respect surrounding them; but it is particularly in Syria and in Asia Minor, that one meets this worship of aeroliths. It does not appear that in Greece men attributed this character to most of the betyles, that in the 2 d century B. C. were still exhibited in the old sanctuaries of Beotia, Megaris, Arcadia and of Achaia. Pausanias attributes it only to three stones at Orchomenos. [1] He found at Pharae in Achaia some thirty quadrangular stones, that were regarded as symbols of an equal number of gods; "this is," he says, "because among the Greek peoples at a very ancient time, rough stones took the place of images, that were later multiplied in the places of worship.[2] If men satisfied themselves for centuries with such elementary representation of the divinity, this was not only because the hand of the artist was not yet

sufficiently exercised in modeling clay, stone or wood. The tr true motive of this abstention must be sought in the nature itself of the belief, in the logical consequences of its principle; It is that one cannot fully comprehend until one takes into account the progress that realized the substitution of po polytheism for fetichism, and that one has defined the enfluence, that could not fail to be exerted on the sculpture by the new belief.

Note 1. page 19. Pausanias. IX. 37 - 1.

Note 2. page 19. The same. VII. 22 - 4.

From pure fetichism, the mind of man passes to astrolatry, which is already the result of an effort of reflection and analysis, then to rise to the conception already much more abstract, whose sketch is traced from the time, when he has commenced to suspect the inertia of the material, and of which he fixes more the principal lines as he believes himself more certain of the truth;[1] Then he detaches from the things to which he had arbitrarily attributed them, the highest attributes of being, whose type he had found in himself; but he then detached them from the external world only to seek another subject, only to transfer them to the invisible agents in which he personifies those superior forces, by which he feels himself dominated, those that limit the duration of his life, and that regulate its course. Those agents he conceives as being endowed with intelligence, sensibility and will, but with an intelligence having a very different scope than that of man, a sensibility more passionate, a will not obliged to take account of the obstacles against which ours strikes at every step. He cannot conceive, without representing them to himself under definite features, the agents that he calls his gods, between which he divides the oversight and direction of the different orders of phenomena, of which the universe is the theatre; each of them has his special function, more or less rigorously determined; the form that will be assigned to it must then be in relation to the special character of the part with which it is invested; one must be able to recognize the personage and name it, by the sole expression of its physiognomy.

Note 1.page 20. We have insisted elsewhere in more detail on the place occupied by astrolatry in the normal development of religious thought. (Histoire de l'Art. Vol. F. p. 42 50.

By this reason polytheism is more apt than any other religious system to favor the development of the arts of design; It imposes on the plastic faculty an effort, that does not require from it fetichism; This is indifferent to the form; the composition and appearance of the body matter little, as soon as they interest the imagination; it animates them and deifies them indistinctly. All this that can be demanded from the artist by the religion founded on this hypothesis is, that in certain cases it offers its assistance in its best to imitat the reality. For example, see the worship of the dead as Egypt practised it. It comprised images, that reproduced as faithfully as possible the features of the deceased, gave consistency to what was termedhis double, and walled within a subterranean chamber of the tomb, served to support the always wavering personality of the phantom.[2] Some of those statues are marvellous in resemblance and truth; but there is nothing that must arouse the spirit of invention. One can say as much of the animal, the tree, the block of stone to which the superstition was particularly attached; If one copies it to have reproductions to increase the number that benefit by its virtues, there is no need to make it more beautiful than nature; the purpose is attained as soon as the copy is an exact reproduction of the original.

Note 2. p. 20. Histoire de l'Art. Vol. 1. p. 180-184.

It is entirely otherwise with the gods of polytheism. The artist is called to distinguish them by the choice and combination of forms used by him to create types, each of which must be the sensible translation of a general idea. These differences he marks by the peculiarities of sex and age, of the shape of the body and the lines of the face. As his hand becomes more skilful, he comes to make all these beings personages more and more definite, in which as in the animal, the secondary characteristics of the organism are strictly subordinated to those personal characteristics, employed by science to constitute the genera and species. Such is the principle that Greek statuary compelled itself to apply, and full success crowned its efforts. Before a fragment of a male torso, the archaeologist will know how to state if i is that of a Zeus, a Hermes, an Apollo or a Bacchus. According to whether the sculptor proposed to himself to represent this or that of these gods, he wi

have given more or less breadth to the shoulders and more or less firmness to the flesh of his marble. There will be powerful muscles, filled with an adult force in full swing; here will one feel the dry and nervous vigor of the ephebe trained in the exercises of the palestra; elsewhere the contour will be more supple; he will even sometimes go so far as to recall the roundness of the body of woman and render the sex almost doubtful. If one then comes to find the head to complete the statue, all will then be in harmony wit the character of the bust, e everything, even the least detail of the face, the freshness of the soft stretched skin, or the wrinkles that furrow the b brow, the hair assembled in great masses, which gives the whole an air of majesty, or short and hard like a fine sod, or again raised in a knot on the top of the skull, and scattered over the neck in soft falling curls, finally the beard, ample and developed on Zeus, Poseidon or Esculapias, while it is not traced on the chins of the immortals, Apollo or Bacchus, that the imagination desired to decorate with the graces of eternal youth.

Centuries of assiduous practice in sculpture are necessary to obtain such precise determination of the divine types by a marvellous harmony of all the refinements of form. Polytheism succeeded better in Greece than elsewhere in this expressing by signs borrowed from the different modes of organic life the ideas, that it had been led to make of invisible beings which it charged with the administration of the various departments of nature. The secret of this superiority is, that it has taken more decidedly the method of only taking the elements of those figures from the traits that characterize the human species. The means that Egypt most commonly employed to give a body to its gods, was to combine the form of the animal with that of man; most frequently it has placed the head of an animal on the shoulders of a man or of a woman.[1] Now however far one goes back in the history of Grecian sculpture, he finds nothing similar. Greece only accepted those combinations in secondary types, most of which were furnished in all pieces by oriental art. Of all these types, some like the sphynx and griffin have played in Greece only the part of motives of ornament; others like the harpy, siren and centaur, whatever their origins, have entered better the current of the mytholog

and of the national poetry; but still, these have also remained in the second plane. As for the gods properly so called, nothing authorizes me to think that their worshippers saw them with the eyes of the mind under those hybrid features, or that they represented them thus, when they attempted to model their images. Men have greatly criticised the epithets ox-eyed and gleaming-eyed, that the Homeric poetry gives to Hera and to Athena[1] they have pretended to conclude from them, that there had been a time when those goddesses were represented, one with the head of a cow, and the other with that of a screech-owl;[2] but we have vainly sought among the monuments and we have not found one of them, however ancient and rude it might be, that confirms that conjecture, and this is further in contradiction with the entire epic period. None other of the great divinities has for qualification an epithet, that allows this interpretation; one does not see why Athena and Hera alone should have passed through a phase not traversed by their brothers and sist

Note 1.p.22. Histoire de l'Art. Vol. 1. p. 58 - 67.

Note 2.p.22. Schliemann, Ilios, city and country of the Trojans. p. 374-384.

It is true, that men allege the evidence of monuments that we have studied as they merit to be; I desire to speak of Mycenaean intaglios. One sees on certain of these engraved stones and in the remains of frescos monsters, lions with mens arms;[1] unnatural beings, that on a human body have the head of an ass or of a horse;[2] one would then voluntarily be disposed to ask himself if he had not under his eyes the works of a period in which the ancestors of the Greeks themselves had also sought in the joining of heterogeneous forms and in the resulting complication, the means of rendering the idea, that they formed of the divine; but those monsters occupy only a very small place in the repertory of the artists, who engraved those intaglios, and further nothing characterizes them as veritable gods. They seem to belong to the same family as the nymphs of woods and waters, as the satyrs, Pan and Silenus, as all the genii who were vaguely seen among the reeds of fountains and in the depths of thickets, were born and multiplied between the time when pure fetishism reigned, and that when was constituted the polytheistic system. Now like the preceding, this period of transition does not reveal itself directly to the historian.

Its poetry has perished; its en irely rudimentary art was not yet capable of translating into the language of forms the conceptions, that then prevailed in the minds. These only divined the empire that they had long retained in the imagination, t the part that they always preserved in the local religions, the persistence of certain types, which all rejuvenated and embellished as they were by poetry and by the classic arts, no less bearing the marks of their origin. From the Mycenaean age, under the features of man or those of woman, the coastal inhabitants of the Egean sea, in Asia Minor, in the islands of the Hellenic peninsula, appear to have represented their principal divinities; it is the human form that is found everywhere, more or less awkwardly rendered, either in rude statuettes, in which we have recognized idols, or in images to which appears to be addressed the homage of the faithful, where the engraver on stone and the fainter have represented ceremonies of worship, scenes of sacrifice and adoration.[3]

Note 1. p. 23. Histoire de l'Art. Vol. 3. Figs. 555, 556; Vol. VI, p. 856, Fig. 428^{16}, 431^{8}.

Note 2.p.23. The same. Vol. VI, p. 885, Fig. 428^{8}, 432^{15}, 438. Other intaglios seem to represent monsters of the same sort with bird's claws or lion's paws, the head of a hare or wolf. (Milchhoefer, Anfange der Kunst, p. 55, 68).

Note 3.p.23. Histoire de l'Art, Vol. VI. p. 852-853, 735-762, 840-844, 890; Figs. 293, 295, 325-354, 425, 428^{23}, 429, 440.

Then so far as one can judge by the images where the form does not yet give a very clear translation of the idea, it is probable that at Tyrins and at Mycenae were already invoked several divinities of which Homer sang, perhaps Zeus and Rhea, Artemis, Hera and Aphrodite; in any case the Greece of Homer is frankly polytheistic. The gods that it regards as ordainers of the phenomena of the physical and moral world, which lends to them the masculine strength or the graces of woman, it endows them all with marvellous beauty, a beauty that it has derived from all the features of the type of its people, but which, carried to that point of perfection, is never among mortals, but an accident of brief duration and rare exception. This will be an affair for the artists, when matter will obey them with docility, to realize the visions of the poet, to fix them in the images that respond to the attempt of an imagination,

that will have been made compulsory by the brilliant epithets of epic poetry, and by the vivid colors of its paintings.

There is a question that imposes itself here:- why are the Greeks the only ones that went to the end in that path of anthromorphism, in which other peoples stopped halfway; Why alone, instead of seeking in the diversity of specific characters of animals the means of differentiating their gods, they imposed on themselves the more difficult task of arriving at that essalt only by the fineness of the shades, that served them for distinguishing the different fashions of the bodies and the faces of men; it has been said, that the Greeks first took into account the bad impression produced on the mind by the combination of forms thus borrowed from very different types; they had better taste than the Egyptians and the Aryans. That is a very insufficient solution of the problem. Those mixtures have something displeasing, when they are formed by the simple juxtaposition of incoherent members; but they give happy effects, that spring from the unforeseen contrasts, when a skilful hand has known how to manage the transition from one form to another, so that the entirety thus created may have all the appearance of organic unity. Greece charged herself with furnishing the proof of this by the use that she made of certain artificial t types, notably that of the centaur.

The appearance of a composite form farther only allows itself to be judged by the execution. As long as that form only floats before the mind, it remains too evanescent, so that this defect may be sensible, if the parts are not well joined. It is entirely otherwise when this image is solidified in a figure, that presents to the eye the fixity of its outlines. Now when the Greeks assumed to define their gods, that they could not do without giving them a body, sculpture was still in its infancy. If in certain of their works, the goldsmith and the engraver of intaglios sometimes knew how to give life and nobility to the images of the superior animals, such as the goat, lion and bull their success was never complete when they attempted the human figure; they seized its movement, but altered its proportions. This is then not a proof that Grecian taste could take account of the bad effect of those combinations in which other peoples appeared to delight.

It has sometimes been thought to find in the nobility of the

physical type of the Greek race the explanation of this very m marked tendency to anthropomorphism. It has been said, that if the Greeks only thought of representing under other forms than their own the gods that created their thought, this was because the Greeks were beautiful, that they knew and were vain of this; but what people could one cite, who do not admire themselves with the best faith in the world? Those that appear to us ugly and almost deformed find pleasure in looking a themselves in a mirror, and smile at the image that it reflects. We further cannot be surprised that the Egyptians and Assyrians both experienced that feeling. The Egyptian type is elegant and refined, the Assyrian more robust and harder; but both have a grand air. Yet Egypt and Assyria, particularly Egypt, gave to many of their gods and goddesses, instead of the noble or charming faces of the most beautiful of their young men or of the most b beautiful of their women, the heads of the crocodile or hippopotamus, serpent or cat, a lioness or bird of prey.

If the animal element never entered among the Greeks, even for a small part, into the image of Zeus or Apollo, Athena or Aphrodite, such as the poets sketched them before the artists gave them a material consistency, it is from the turn and the quality of the Greek genius that must be demanded the reason of that difference. All childlike as it was still, this genius was henceforth one that must later create philosophy and science. Even in the time when all its thoughts were produced in the form of myth and poetry, it had already carried observation and analysis farther than the Egyptians and the Chaldeans, when they passed through the same phase of their evolution. When it had conceived the idea of those regulating powers, that maintained order in the world, it had seized more strongly than its predecessors the essential character, that distinguishes man from the animal; it had recognized that man is the o only living being that reasons his acts, the only one where reflection precedes action of the will. Once penetrated by this conviction, would he have been justified in seeking elsewhere than in human nature, in some sort multiplied by itself and carried to the sublime, the elements from which he formed the soul and the flesh of his gods?

The epic period in which is summarized all the work of the primitive period, boldly evidences the superior compass and

virtual power, which then distinguished the Hellenic period. In comparison to the wealthy and civilizations already so well equipped in the valleys of the Nile and of the Euphrates, they were almost barbarians, those Achaians and Aeolians for whom had been composed the songs from which came the Homeric poems. Yet the rhythm and language of those poems, the feelings and ideas that the personages express, the arrangement of these tales and these scenes, the sketching of these characteristics, all finally concur in making the Iliad and the Odyssey masterpieces, which in spite of the youthful and sincere naivety that they retain, seem to be much nearer us, and are more easily i intelligible to us, than the monuments of Egyptian and Chaldean letters. If one establishes a comparison between the oriental world and rising Greece, the latter represents from the first a state of intelligence more advanced, and one could almost say more modern. One can then expect to find in Greek art, when f for it sounds the hour of free development, something neither placed there by the Egyptians, Chaldeans, Phoenicians, nor the peoples of Asia Minor, a nobler and purer beauty, the expression of the most elevated thoughts.

We shall not attempt to give the history of the principal d deities of the Hellenic pantheon, by asking ourselves for each of them, whether the ancestors of the Greeks brought it with them, when they came to settle in the country to which they gave their name, or indeed if it be a stranger, who by the favor of international relations, has come and is acclimated elsewhere than its place of origin. To establish, if one can so s speak, the civil status of those divine personages, it is necessary to venture on the land of comparative mythology, still far from solid and slippery, to discuss without competency Sanscrit etymologies, as well as resemblances pointed out by some and contested by others, between the deities whose power is celebrated by the poets of the Vedas and those sang by Homer. Then it suffices to recall in a general way the results that now a appear acquired for science, in spite of the controversies carried on concerning the primitive sense of certain names. Differences of opinion only concern the deities; men are agreed to recognize that certain gods belong to the common patrimony of the Aryan race, that they were born in the minds of the fathers of that race before their sons successively leaving their

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mysterious cradle, separated and scattered from the banks of t the Ganges to those of the Seine and of the Thames. What places these gods out of line and defines them is that everywhere, among the different groups of the ethnic family where one finds them, they bear a name derived from the same root, a name that corresponds to an identical conception. The true type of these gods that may be termed the Aryan gods is that god, who at last among the Greeks and Italiotes assumed early the role of a supreme deity, the Dyaus Pitar of the Hindoos, the Zeus Pater of the Greeks and the Jupiter of the Latins.[1] Other gods appear purely Greek, i.e., that neithe their name not the notion that this name represents are found outside Greece. For example, such is Poseidon, the god of the sea, of that sea which the Aryans did not know before their dispersion. Such also is Apollo; the name that designates him, whose sense further remains obscure, offers not the least analogy with any divine names that the history of religions raised among congenerate peoples, and what is still more significant, this discovers nowhere, neither in India nor in Iran, a figure that by all the character od its physiognomy and by that of its attributions, can be justly compared to the Apollo of Delphi, the sovereign healer of the evils of the body and of the soul, pacificator of consciences, of troubled families and cities, where the sounds of his voice and of his lyre diffused calmness, where the expiatory ceremonies prescribed by his oracle reestablished order and harmony. One has the same impression before Pallas Athena; at first the goddess of the aurora or of the lightning that pierces the cloud and causes the beneficent shower to pour, then goddess of combats where coolness and artifice surpass brute force, she has finally become by a gradual transformation, the inspirer of all useful inventions, the eternal wisdom, the deified intelligence.[1]

Note 1.p.27. James Darmesteter, Le dieu dans la mythologie aryenne. (Essais orientaux. 1883. A. Levy. p. 103 to 133).

Note 1.p.28. As for what concerns each of these divinities, the probable etymology of its name, and the different conceptions to which it responds, one will consult a book in which a are summarized the researches of the principal contemporaneous mythologists, the Mythologie de la Grece antique by P. Decharme. (2 nd edition. Garnier. 1886).

Besides these legitimate sons and daughters of Aryan genius, that it brought into the world, some in the distant native land whose memory is lost, and the others later on the shores of the Egean sea, it has its adopted children. The error of Ottfried Muller and of Welcker, of Gerhard, who have cast so much light on Hellenic mythology, has been not to appreciate at their value the influences suffered by the Greek race, from the moment when it entered the circle of the coast peoples of the Mediterranean. It has also been wrong to attribute to religious conceptions the same persistence as to a language, to believe that they would as victoriously resist the influence of the foreign elements. In spite of the attachment that every people bears to its own gods, it is not possible to withdraw these from the influence of outside religions; there is for its beliefs a peril which these will have so much less chance of escaping, as the adjacent people has a civilization more brilliantly developed, and a worship in which images and external pomp play a greater part, a worship that by these means acts more strongly on the sensibility.

We have stated how the Grecians eagerly borrowed from the Semites of Chaldea, their neighbors and subjects, the worship of the goddess Anabit.[2] The maintenance in all its purity of the spiritualistic worship of Ahura-Mazda, the sole god that Darius and [illegible], is an affair of state in the monarchy of the Achemenides, and yet there sufficed the duration of two or three reigns to introduce this exotic element into a religious system which seemed to exclude it; Artaxerxes Mnemon already made a place for Anahit in the official religion, and erected altars to her. Thus in historic times we have been witnesses of a phenomenon, that must have been frequently produced in the earlier period; that borrowing made by the Aryan world from the Semetic world is repeated many times and under many forms. The Greeks were like the Persians, the immediate neighbors of the Assyrians and Babylonians; by the intermediation od other peoples the fruits of the civilization of the great Semetic states came to them. Those distant relations followed a double route, the way of the sea and the way of the land.

Note 1.p.28. Histoire de l'Art. Vol. V. p. 416-417

Note 1.p.29. Especially see the Memoir, so rich in ideas and

facts, that Ernest Curtius published under this title:- Die griechische Götterlehre von geschichtlichen Standpunkte (Preussischer Jahrbücher. vol. 36. 1875). We have made numerous borrowings in the pages that follow.

By way of the sea, the Phoenicians served as intermediaries.[2] The feminine deity, who is found everywhere that the ships of the Phoenicians landed, appears in the Greek myths under two forms, sometimes as a wandering goddess, under the changing features of an Io, Europa, Helen or Dido, sometimes as a sedentary goddess. The Phoenician merchants established their goddess in Cyprus, the territory farthest east where was anciently settled a Greek people; all the ports there are known where they opened their agencies, all points where occurred contact between Syrians and Greeks. Under the name of Aphrodite, which is probably only an alteration of Ashtoret, the Syrian goddess passed among the Greeks of Cyprus;[3] the same influence carried the goddess and her worship very far toward the West to Cythera, quite against the coast of Europe, and on that coast itself at Corinth and even elsewhere. These are uncontested facts; the most jealous defenders of the autochtony of the Olympian gods do not dare to deny this origin; but they call Aphrodite the sole foreigner on Olympus. Is that assertion well founded? We do not believe it. If the routes followed on the continent by the oriental influences are less easy to recover, the discoveries of Botta and of Layard, Place and Sarzec, the study of Assyrian sculptures and of cuneiform inscriptions daily reveal relations between Greece and Assyria, that formerly were not suspected. We begin to conceive better the nature of the feminine deity, who in the Semitic religions is grouped in the first place with the great male god; this is the same being under different names, Belit (Beltis, Mylitta) at Babylon, Istar in Assyria, Nana in Elymaid, Annat in southern Chaldea. All these names, each of which designates a particular aspect of this divine essence, is likewise applied to a goddess, whose activity is not limited to a certain body isolated from nature, to certain of its manifestations, but is nothing else than the power itself of this nature, the moist principle of all growth, the matrix that receives all the germs, that bears without intermission and nourishes without ever being exhausted.

Note 2 p.29. For whatever are the elements that the oriental religions furnished to the Greek pantheon by the intermediary of the Phoenicians, one cannot refuse to take into great account the brilliant memoir of V. Berard. (De l'origin des cultes arcadiens. Essai de methode en mythologie grecque. 1894. Thorin). Doubtless there are in that work some confusion and too many h hypotheses, many that appear hazardous, especially since the author has not taken the trouble to separate them, and to devote to each of thec a systematic exposition; but he has no less demonstrated that Phoenician influence made itself felt in Greece, even in districts where up to the present time men have not even dreamed of seeking the trace. He recognized a Syrian Baal in the Zeus, that was honored on Mt. Lycaeus by human sacrifices, and this conjecture presents the highest degree of probability to which such researches could lead. Among the indications that evidence relations established between the Phoenicians and the ancestors of the Greeks of history, one should not forget to mention the numerous terms, that the Greek language has drawn from the common fund of Semetic idioms, and that especially designate either plants and animals, or products and common objects imported by commerce. Various lists have been drawn up; perhaps the most complete is that presented by W. Muss-Arnolt under this title:- On Semetic words in Greek and Latin. (Transactions of the American Philological Association. Vol. XIII. 1892. p. 35-156.

Note 3.p.29. Histoire de l'Art. Vol. III. p.282. Note 1.

This deity of Chaldean origin, one again finds in western Asia, on the soil occupied by peoples of different races, by those Heteans whose language and ethnic affinities have not been well difined, by the Semites of Cappadocia and of Cilicia, by the Aryans od Armenia and Phrygia, of Lydia and Caria. She is adored in Armenia under the name of the great goddess Artemis, under that of Va in Cappadocia, and of Anaitis at Zela in Pontus. In regard to the last sanctuary, the Mesopotamian origin of this worship is attested by Strabo, as well as for Armenia.[1] Thus the principal centres of the worship of this great goddess of nature are distributed as so many stations on the principal caravan routes leading to the Euxine and the Ægean seas, and this is across the territory of peoples, who are the nearest relatives of the Greek tribes established on

the coast. Why was the transmission arrested at the limit of the territory of these tribes, why was the thread broken at the moment when it reached the coasts of the two seas? All along their shores we find a series of sanctuaries and feminine deities, that all present the same fundamental conception, a conception that on these coasts cut into such a great number of little autonomous states, suffered various changes of form in the active and subtle minds of the Greeks. If the primitive identity has been mistaken, this is because the Greeks have been too much isolated from their neighbors. The precious metals delivered to the Greeks in ingots and in weighed blanks according to the Babylonian standard received from their hands a stamp, that permitted them to pass as national coins; thus the religious ideas that dominated in western Asia, adopted by the Greeks, were struck again by the Greeks and marked as a new coinage. On these coasts of the archipelago, the pantheistic idea broke into so many rays, that until our days men are unable to recognize the unity of the primitive origin.

Note 1.p.30. Strobo. XVI. 1, 4; XI. 14-16.

These principles being fixed, one has no trouble to verify what traces have been retained from that origin by several deities, that Greece had made her own to the point of sometimes forgetting from whence they came. The nature-goddess of Asia was venerated on Sipylus under the name of Rhea-Cybele, and when the Aeolians and Ionians addressed their homage to her, they did not forget that she was the sovereign of the mountains of Phrygia; but it was not the same for Artemis, whose name seems to be of Armenian or Phrygian origin. Artemis that a bond of close relationship already attaches to Apollo in Homer, is one of the divine figures, to which the Greek imagination in time succeeded in giving the most accomplished form; but this form, the result of prolonged elaboration, did not prevail everywhere, and it is the oriental goddess that one recognizes in the sanctuary o Ephesus, a point at which converge Phoenician influences exerted by sea and the Assyrian i influence transmitted by land through an entire series of intermediaries; nothing is less in the Greek taste than the strange aspect of that image, whose body is covered from top to bottom by several rows of breasts.[1] The celebrated worship of Hera at Samos has the same basis as that of Ephesus. All those

deities of Asia Minor have the same character of vague omnipotence, the same indeterminate features. It is otherwise on the soil of Europe. There among the Greeks and Italiots is everywhere a marked tendency to idealize the gods. The idea of the supreme god, such as realized in the type of Zeus, remained predominant in Europe; it prevented that nature goddess from assuming in Hellas the same supremacy as in Cyprus or at Ephesus. What was also peculiar to Greece were the efforts made to establish a definite relation between this goddess and Zeus, whose spouse she became here and there the lover, elsewhere the daughter, rich material for the inventions of the poets. Here, wh where the goddess is conceived as wandering, she is the object of a secret amour of Zeus; this is the case of Io and of Europa; there is adored as a sedentary goddess, and is united to Zeus by an official bond; they celebrated at Argos the marriage of Zeus and Hera, at Dodona that of Zeus and of Dione. A very ancient tradition makes Dione a daughter of the ocean; attests that her worship was brought from beyond the sea, and came to be added to that of Zeus. One will also note the place occupied in several of these cults by the dove, the bird of the Syrian goddess, for example in those of Aphrodite and of Dione.

Note 1.p.31. On the Artemis of Ephesus and the transmission to the Greek colony of an entirely Asian cult, see the memoir of Ernest Curtius, Beiträge zur Geschichte und Topographie Kleinasiens. (Ephesos, Pergamon, Smyrna, Sardes). 1872.

It is in the marriage of Athena, so profoundly Greek in the aspect that poetry and art have lent to her, that may be perceived some half effaced traits by which one believes that he divines the influence of the exotic prototype, from which has been taken so many different impressions, and this feeling is still stronger when he studies the myths of Demeter and of Kora. Kora under the title of Despoina, "the Sovereign", takes in certain places the part of a supreme deity, and is confused with Cybele here, there with Aphrodite, with whom she has certain emblems in common. Demeter is a dispenser of life; her attributes were sometimes those of Aphrodite, sometimes those of Athena or Cybele. At the bottom of her mourning is concealed the idea analogous to that of Aphrodite weeping over Adonis. No goddesses have better retained their naturalistic character than Demeter and Kora, or have taken less of an ethnic and po-

political character.

However brief they may be, these indications suffice to cause recognition in several of the principal goddesses of Greece, of varied forms of the same divine type, that represents the power of nature operating in the damp soil nourished by the dew of heaven. Thus vanished the distinction that men pretended to establish between Aphrodite and the other inhabitants of Olympus. Aphrodite is not the only daughter of Asia, that has received from the hospitable genius of Greece letters of a grand naturalization. Thus falls and opens in wide breaches at each discovery made by history, that barrier which national pride had formerly raised between the Hellenes and those called barbarians by them, an imaginary barrier before which in modern times, were too long arrested incomplete science and enthusiasm into which entered some superstition; but the originality and the beauty of the Greek deities lose nothing from the change of the point of view. We only admire the more the creative activity of Greek genius, in seeing that it has known how to make of that formless idea, that had only found expression in the Orient by an indefinite accumulation of symbols. From this pantheism that lends itself badly to the conditions of sculpture, Greek art derived free and living persons, from that universal goddess the national gods. According as the Greek cities have wandered more or less from the primitive oriental tyle, they have attained a degree of civilization more or less elevated; thus we see the cult retain a character more materialistic at Corinth and at Partas in Achaia, where was perpetuated the institution of hierodule courtesans, than at Delphi and at Athens; Now Athens and Delphi took a very different part in the development of the Greek genius, than did Patrae of even the industrious and commercial Corinth.

Another conclusion:- it is necessary to renounce the search for the origin of each of the goddesses of Olympus in as many different primitive conceptions as there are distinct divinities. Mythology thus becomes a morphology. If this were the place to commence the study, what we should have to seek, is how a very general idea was conceived and modified by the different Greek tribes, by what stamp each has marked it. Nothing is more interesting than to follow the Greek mind in this work of transformation and appropriation, than to recover the methods

that it has spontaneously employed. This work was already very advanced when the arts of design began to lend their assistance; but they alone could carry it farther and complete it. It is by its form that is determined the living being; now that form described is only perceived an a whole; only the form impressed on the material comprises that precision, and permits to mark, by variations of form and color, and especially by inflections of outline, the difference of souls, to mark as distinctly so that such a face or such a body gives to the observer the feeling of the individual, of a being unique in the world, that is distinguished by certain particular traits from all beings, that it sufficiently resembles to take rank in the same kind a and the same species.

The most interesting part of the book that we propose to write will be the history of the efforts attempted by sculpture to continue this work, and to lead it to its end, efforts that from century to century were happier as the execution became more assured and more free. The poet first gave a certain consistency to these superior types, slowly sketched by an idea, that under the appearance of ingenuousness already had a singular power of analysis; he it was that traced as a first sketch figures in which are incarnated these theoretical conceptions; but the artist resumed the fixed outlines and modeled the features and members of these images, who made them so marvellously beautiful, that they imposed themselves forever on the imagination of men.

For fifteen centuries have been overthrown the altars of Zeus and Apollo, Aphrodite and Athena; yet still today, when art u undertakes to translate general ideas, it cannot escape the temptation or rather the necessity of having recourse to the forms that Grecian sculpture formerly created for the same purpose. And of all solutions of the problem, that found by the Greeks is still the most satisfactory, and when it was adopted, t the principles and method not changing, one reaches the same result. Our ideas are more complex than those of the ancients, and our feelings have shades that their simpler souls never knew. The modern artist will occupy himself in marking that difference, or if you wish, that superiority. To obtain this effect he will count less on the diversity of attributes, than on the power a and depth of expression; he will desire to place something in

the features of his figures, that is not in the antique marbles, somethng finer and more varied, more moved and touching; but e even when he shall succeed in that attempt, he will still be t the disciple and the continuer of the Greek masters. By their example and like them, from the subtle and impassioned study of the human form, will he demand the means of making visible to the eyes,what by itself does not seem possible to be represented by lines and by colors, the principal modes of existence, the ideas of taste, strength and quality.

Chapter II. Architecture.

1. Conditions given to architecture by the Dorian invasion.

If we form an accurate idea of the general character of the period, that follows the fall of the Achaian kingdoms, we must not expect to find there the trace of an original brilliant d development of architecture. Warlike and poor tribes have menaced, harassed, and then in most districts have driven into exile the last representatives of the ancient dynasties. The invaders took possession of the best lands; in spite of their ramparts and their grand monuments, they reduced to a secondary state the royad cities of Minyean princes of Iolcos and of Amyclea. After the victory, the chiefs that had led to the combat the Dorian bands lived in their rural domains, as the kings of Sparta have always done, in the midst of the tenants by whom they caused them to be cultivated; they had not yet had time to acquire the habit of luxury and the taste for building. As for the vanquished, for those groups of emigrants who had fled along the coasts of Thrace, or across the islands of the Archipelago, then had to fight against the Mysians, Lydians and Carians to end by settling in Asia Minor, they had too much to do in the first moments to think of undertaking structures of some importance; it was only after many years of tranquil possession, that among the representatives of the great Achaian families, there could arise in the hereditary princes of the new cities, the desire to profit by the security refound and reconquered wealth to construct for themselves palaces, which by their size and ornamentation recall those, in which the popular poetry c caused their heroic ancestors to dwell.

Between the 11 th and 8 th centuries, architecture was then scarcely able more than to continue by a sort of routine in the practices already consecrated by custom. It does not appear that during this space of time the condition of the surroundings were very favorable to the soaring of that art; men did not have to erect edifices only such as the Cyclopean walls of Argolis, the palace of Tyrins, and the domed tombs of Mycenae. In the entire extent of the vast areas of the territory to which we refer our researches, we do not find the ruins or even the vestiges of a single building, that we dare to attribute w with entire certainty to one or another of the three or four centuries, that elapsed between the Dorian invasion and the

first olympiads. That gap in monumental tradition we can only attempt to fill by the aid of scattered information found in the writers, particularly in the Homeric poems.

2. Materials and Construction.

The entry of the Dorians into the Peloponessus must have changed nothing in the habits of the Greek mason. The newcomers caused their houses to be built by the workmen, that they found in the country, and the emigrants carried to the opposite shore of the Egean sea the methods that their fathers had transmitted to them. Rubble and crude bricks continued to form the body of most structures. Homer does not mention these materials; this is because, as in the walls of the habitations of Tiryns and of Mycenae, they were everywhere concealed either beneath panels of wood or coverings of metal, or were under roughcast and that concealed them from the eye. There is perhaps an allusion to this plastering in a passage of the Odyssey.[1] It is in relation to the polished stones on which the princes of the people, like Nestor at Pylos, sat before the gate of the royal dwelling. The poet says that those stones are "white,"and he adds two words (apostilbontes aleiphatos), that the scholiasts interpret thus:- "brilliant as if they had been rubbed with a fat body;" but they introduce there an "as if", that is not in the text; one cannot suppose that Nestor sat on an oiled slab, which would have spotted his garments. Is it not more natural to translate "aleiphar" by "coating." The stones would have been coated with milk of lime. At Tiryns, it is not alone on the surfaces of the concrete that forms the wall, that one finds these coatings of lime; traces of them are also found on the great split blocks or those of sandstone cut with the saw, which play the part of antes before the ends of the walls.[1]

Note 1. p. 38. Odyssey. III. 408-409. -- Helbig. L'epopee homeric expliquee par les monuments. (Translation Trowinski. Didot. 189 . p. 124-125.

Note 1.p.37. Do..feld in Schliemann's Tirynthe. p. 247.

If in the greater number of structures, this stucco served to conceal the poverty of the masonry, there were however more careful constructions where the stone remained visible. It is this kind of construction that the poe has in view when he compares the close ranks of the Myrmidons to "close set stones", that the mason adjusts when he builds a lifty house, that must

resist the force of the winds;"[2] he represents to himself a wall, where the stones are very large in dimensions , leave no hold for the gusts of the tempest, thanks to the arrangement of the joints. Homer elsewhere applies another epithet no less expressive to the stones, that enter into the composition of these walls; he says that in "polished stones"were built the fifty chambers of the palace of Priam,and the dwelling of the magician Circe.[3] These walls of "close set" or "polished stones," t that the epic singers had under their eyes, one can represent to himself as quite similar to those enclosing the gate of lions at Mycenae. They were built with beds and regular courses; the surfaces were dressed with a tool.

Note 2.p.37 Iliad. XVI. 212-213; Odyssey. XXIII.,193..

Note 3.p.37. Iliad. VI. 244; Odyssey. X. 210, 253.

Nothing leads one to believe that men prided themselves in setting materials of very great dimensions, like those, whose enormous size astonishes one at Tiryns and at Mycenae. Megalithism assumes ambitions, that the men of that time do not seem to have experienced; it assumes the concurrence of very numerous men, that one could not manage. These conditions were realized at several points of the Greek world in the course of the primitive age. But during the succeeding period, the social conditions were less ready to favor that kind of effort. This is what the ancients themselves had felt. They never hesitated at the most remote date, that it is proper to assign to the walls of tombs, in which we have recognized a legacy of Achaian civilization; they always attributed them to that mythical age, whose great event was the war of Troy, and which closed with the Dorian conquest.

There is no mention in Homer of burned bricks or tiles; it was only to make vases that clay was subjected to the heat of the kiln. As for wood, it continued to play a part as important as in the past. The mountains of Greece must have been covered everywhere by dense forests.

This wood being in abundance, the workmen inserted it as anchors of crossed timbers in his rubble masonry and his masses of crude bricks or tempered earth; thus he constructed the rampart which the Greeks had built on the shore of the Hellespont before their vessels. The poems also contain several allusions to the fir timbers of which was made the carpentry of the roof,[1]

to the cypress planks that formed the jambs of the doors, and to the pieces of ash that served as sills.[2] The poet does not forget the planks, that in the same doors composed the swinging door.[3] He usually applies to the planks composing these panels the epithet"shining."[4] Yet they were not all ornamented by sheets of metal, like the doors of the palace of Alkinous, where gold shone, or the bronze doors of Tartarus.[5] It was most frequently the polish of the wood, perhaps rubbed with a varnish, which gave that gloss.

Note 1.p.38. Odyssey. XIX. 37.

Note 2.p.38. The same. XVII. 339.

Note 3.p.38. The same. II. 344; XXI. 137.

Note 4.p.38. Iliad. XIV. 169; Odyssey. VI, 19; X, 230, 256, 312 etc.

Note 5.p.38. Odyssey. VII, 83- 88, Iliad. VIII, 15.

It is also probable that the supports, that sustained the beams of the roof in the great halls of the Homeric palaces, were entirely of wood, as in the palaces of Tiryns and of Mycenae; that trunks of trees were the columns, that in the palace of Alkinous stood around the hearth, the columns where Arete leaned his seat, or one hung on a hook the lyre of Demodocos. Homer does not explain himself on that subject; but Pausanias saw at Olympia an old column of wood, split from top to bottom and supported by ropes. To shelter this shaft, that was said to have belonged to the house of Oenomaos, they had placed over it a roof borne on four columns of stone.[6]

Note 6.p.38. Pausanias. V. 20, 3.

3. Funerary Architecture.

Between the age when the exploits of the Achaian heroes furnished to epic poetry the primary material of its songs and that when this poetry died after having completed its work, there was produced a notable change in customs; the rite of cremation was introduced into Greece; it tended to replace that of burial in the obsequies. Not a hero died before the walls of Troy without the kindling of the funeral pyre for him. It would be an affront to the dead to not be extended on that last couch by the hand of a friend or of a relative. To hasten the combustion, he enclosed the corpse in the fat of slain victims; he placed near him vases filled with oil and wine, whose contents flowed over the pyre; he brought the torch of dry branches,

and when the flame had done its work, he collected in the still heated ashes the whitened bones, and deposited them in the funerary urn.[1]

Note 1.p.39. Iliad. XXIII. 160-178, 249-255; XXIV, 787-801; . Odyssey. XXIV. 65-84.

By what route was that practice of cremation disseminated in the Greek world? Did the Greeks receive it from one of the peoples in contact with them? Or did they come to it themselves, when they changed the ideas, that they formed of the condition of the dead? We have elsewhere tried to solve this problem; we shall limit ourselves here to a summary of the conclusions that we have reached.[2]

Note 2.p.39. G. Perrot. La religion de la mort et les rites funeraires en Grece. Inhumation et incineration. (Revue des Deux Mondes. 1895. Vol. 132. p. 98-127. Also see the beautiful work of Erwin Rohde. Psyche, Seelencult und Unsterblichkeitsglaube bei den Griechen. 1894. This is the work of both a learned philologist and of a keen analyst of ideas, and of a philosophic historian.

Cremation was not borrowed by Greece from foreigners. There is no trace of that rite in Egypt, Phoenicia, nor among the peoples of Asia Minor, such as the Carians, Lydians and Phrygians. From the spontaneous labor of the Grecian mind must we demand the reason of these changes. Men have thought to find t this reason in the precarious existence that the Dorian invasion caused to the tribes, who saw themselves forced to leave their homes to seek others in the islands, in Thrace and Asia.[3] Those men that were lost in the course of these migrations, they could no longer deposit near their ancestors in a family tomb. To bury them in a district to be abandoned the next day was to condemn their remains to be forever deprived of that homage, which was the consolation of the dead; it was even to expose them in that tomb over which no person watched, to find themselves some day cast on the surface of the ground by the blade of the spade. The means of protecting the remains of cherished beings from all profanation, would be found in cremation. An urn in which was enclosed the calcined bones could always be carried with them from camp to camp, until the time, when h having reached the termination of its travels, the tribe finally entrusted this deposit to a soil that belonged to itself.

By this feeling was Homer inspired, when he makes Nestor propose to burn on a single pyre the bodies of all warriors, that just fallen in the first battle, and to unite all their ashes beneath a single mound, "so that," says he, "when we return to our native land, we may carry to the children, each for our part, the bones of the fathers."[1]

Note 3.p.39. Helbig. L'epopee homerique. p.83.

Note 1.p.40. Iliad. VII. 335 336.

Unfortunately these two verses appear to be only an interpolation due to a rhapsody that had to explain why the Greeks undertook such a great labor; the reason that he gives for it is most awkward. All those bones are mingled in the pyre and the tomb; how then at the moment of departure could be recognized those of a certain dead man? Besides, nowhere is there a trace of that purpose in any other portion of the Homeric poems. Beneath those mounds erected on the shore of the Hellespont, after the victory and departure of the Greeks, continue to repose the ashes of the heros that fell before Troy.

Then one can explain the change in the rite only by the progress itself of Greek ideas. The primitive conception was that of a life very similar to that which we lead beneath the sun, of an incomplete life, always faltering, that continued in the tomb, so far as the piety of the living was applied to support it by sacrifice. That conception had determined the character of the Mycenaean tomb, like the Egyptian tomb, it made a reduced copy of the dwelling of the living. Yet the mind, all disposed as it was to content itself in such matters with vague ideas and confused images, ended by being anxious concerning the contradictions, that experience did not fail to make to this naive hypothesis of survival in the tomb. Instead of this dead man that men had believed, that they fed and refreshed in his tomb, when this was opened at the end of some years, no more was found than bones injured by dampness. Before that nonentity it becam difficult to affirm the persistence of the being, and yet men could not resolve to admit that nothing more remained of what in the previous day had been seen full of life, strength and wisdom.

They they came to ask themselves, if it was not necessary to seek elsewhere what was no longer found in the tomb, what endured when the organs had been entirely dissolved. Something in-

indefinable which men could not decide to renounce, they figured him as a sort of reflection and phantasm of the body, that this projected into space before disappearing; it was compared to smoke, to the apparitions of a dream, to the shadow cast on the wall by him.[1] The term finally employed by preference to designate it was image (eidolon). If this image had no thickness, if when seen by the eyes the finger could not touch it, it no less retained the features of whom it represented. With the memory of the past it also kept the feelings, that caused to beat the heart of the men, whose fame it perpetuated. Almost immaterial, light and intangible, how did it allow itself to be shut within the prison of the tomb? Yet it was necessary for it to be somewhere, that it should have its dwelling. That house was a mysterious country of silence and darkness, Hades of Erebus.

Note 1.p.41. Iliad. XXIII. 100-101; Odyssey. X, 495; XI, 207-8

Where was Hades placed? None could say; it was very far, toward the North, on the shore of the ocean; but the shade, as soon as it was separated from the flesh, did it of itself find the way, that path by which so many other shades had already passed?[2] Those sister shades, those "images of those who had ceased to suffer", it went to rejoin them in the dreary extent of the uncultivated land, where flourished the pale asphodel. In time from this conception came that of the happiness reserved for the just in Hades and the punishment that strikes the wicked. This last conception corresponds to a new advance of thought; it already appeared in a verse of the Iliad and in fifty verses of the Odyssey.[1] Both of these texts belong to t the series of most recent retouchings suffered by the Homeric poems.

Note 2.p.41. The idea that to find this route, the shade needed a guide, appeared only in the last book of the Odyssey, that did not form a part of the rest of the poem, and was only added later. There alone for the first time Hermes appears as psychopomp or guide of the souls. (Odyssey. XI. 575-625).

The tale of the visit of Ulysses to Hades permits to be divined, how much the mind of man was still attached to the first conjecture suggested to him by the enigma of the dead. The phantoms evoked by the hero are mute, until they have wet their l lids with the blood of the slain victims; only then when they have drunk, they resume a gleam of life; they have strength to

speak. This trait is not in place here; what have those empty shades to do with drinking and eating, who no longer have any flesh? The labor of reflection has in vain led to a solution of the problem, that is less materialistic than the preceding one, the poet continues it without perceiving the contradiction of the elements, that logically pertain to principle, that the intelligence seems to have passed and abandoned.

The belief in Hades, the assemblage and sojourn of the shades, has then but imperfectly triumphed; it is not substituted for the more ancient faith; it is superposed thereon without ever descending as before in o the depths of the souls of the peoples. Yet it could not fail to have a certain effect on the funerary rites, and by that action we are inclined to explain the change produced in the customs, when Greece commenced to burn the corpses, that had previously been buried.

After death, there remains for Homer only that impalpable shade, that however is the physical and moral image of the deceased. What particular vapors enter into the composition of this phantom, none have known him to state; but in any case, it was neither made of bones, of tendons or muscular fibres, of nothing that had any consistency or weight. It then appeared that it could be born, to take its flight toward Hades, only when all organic matter was destroyed. The fragments of the body, while not completely dissolved, prevented the human person from transfiguring itself into the incorporeal image, and as if it were volatilized. To hasten the moment of that separation, was it not a sure means to deliver that body to the devouring heat of the fire? That is certainly what was thought by the inventors of cremation; one divines this in the response of the mother of Ulysses addressed to her son, when he complained that he could not hold her in his arms:--

"But even on this wise is it with mortals when they die. For the sinews no more bind together the flesh and the bones, but the great force of burning fire abolishes these, as soon as the life hath left the white bones, and the spirit like a dream flies forth and hovers near." [1]

Note 1.p.43. Odyssey. XI. 218-221.

There the poet gives one to understand that the flame of the pyre looses and frees the soul, the psyche, which is nothing else than what he elsewhere calls the image, the eidolon; but

in the Iliad he expressed still more clearly the thought of his contemporaries, when he causes Patroclus to speak, who appears to Achilles during the night, to hasten the celebration of his own funeral rites:--

"Bury me with all speed, that I pass the gates of Hades. Far off the spirits of men banish me, the phantoms of men outworn, nor suffer me to mingle with them beyond the river, but vainly I wander along the wide-gated dwelling of Hades. Now give me, I pray pitifully to thee, thy hand, for never more shall I come back from Hades, when you have given me my due of fire." [2]

Note 2.p.43. Iliad. XXIII. 71-74.

One cannot state more clearly the decisive and liberating effect of cremation; it is like a sacrement that confers on him that receives it the right of going to find, if not happiness, at least repose in the common asylum of the dead. There is something of the virtues, possessed by the absolution given by the priest to the dying, in the Catholic faith. [3]

Note 3.p.43. Like Patroclus, Elpenor could not enter into Hades, because when he presents himself to the eyes of Ulysses, he had not yet been burned. (Odyssey. XI, 50 78). So that Rohde noted the fact (Psyche, p. 25), that if it is sometimes stated that the soul, immediately after receiving the mortal stroke, went or descended to Hades, this is only an abridged mode of speaking, that does not claim full accuracy. The poet expresses himself otherwise, when he desires to mark clearly that the dead has penetrated into the depths of Hades. After having talked with Ulysses of that sort of frontier where the hero has assembled the shades, the soul of Tiresias returns into the interior of Hades, "when he had told all his oracles."(Odyssey. XI. 150.). Likewise Andromache, when she speaks of her father and her seven brothers, that Achilles has slain, but to whom he accorded the honors of the funeral pyre; she says to them, "all these on the selfsame day went within the house of Hades." (Iliad. VI. 422).

One will note the last words of Patroclus:- "Once that I have entered into Hades, thanks to the flame of the pyre, I shall never return again on earth." Perhaps there is reason to seek there the echo of anxiety, which contributed to suggest to the Greeks the idea of cremation. It is known how much was disseminated in the middle ages throughout all Europe the fear of vam-

vampires, as they were called of those dead that were supposed to leave their tombs at night, to surprise the living while asleep and to suck their blood. Those beliefs, that appear to have disappeared from the West, still exist among the Slavs of Austria and those of the Balkan peninsula, as well as among the G Greeks of the islands and of the mainland. Everywhere, to put an end to the incursions of the dead suspected of being a vampire, the body is exhumed and is burned to the last fragment; that being done, one can sleep in peace in the village that its attacks desolated.[1] If the Greeks of today are not safe from those foolish terrors, why might not their ancestors be sensible to them three thousand years ago? Many traces have been found in ancient authors, of superstitions analogous to those relating to vampires and their murderous activity;[2] if these superstitions continued to trouble souls in civilized Greece, it is because they had their roots in a very distant past. The generations that believed most strongly in the presence of the always living dead in the tomb, would no fail to tremble, when they felt so near them this formidable neighbor, all whose caprices it was impossible to foresee, when they had on him by the propitiatory sacrifice only a feeble and intermittent hold. The destruction of the body by fire, of its teeth that could bite, of its nails that could tear the flesh, sheltered them from th that peril. What would one have to fear from a phantom, from a phantom further sent into distant Hades, that closed its gates on those, to whom it had opened them?

Note 1.p.44. See Pashley. Travels in Crete. 1837. Vol. II. Chap. 28. The author relates curious tales of vampires, that he collected among the Sphaktiotes and other mountaineers of Crete.

Note 2.p.44. Those are the sons of Medea, who were unjustly put to death by the Corinthians, and punished them for this crime by causing their children to perish. (Pausanias, II, 3, 6); it was one of the companions of Ulysses, who was stoned at Temesa, a village of Italy, and avenged himself for it by massacring persons of all ages (Pausanias, VI, 6,3); those are e especially female spectres, that are called according to the place, empouses, lamies or mormolykies. It is still believed, that they feed on human flesh; but by preference they attack bodies young and beautiful, because the blood is purest. (Phil-

(Philostrates. Life of Apollonios). Plato also speaks of certain impure souls, who have not been able to free themselves e entirely from the bonds of the flesh, remain wondering and stork phantoms around the tombs. (Phedo. Sect. 69).

Whether such did or did not concur in accrediting the new conception and the new rite, wherever this prevailed, it must produce the decadence of funerary architecture and impoverishment of the tomb. If the tomb were not the eternal dwelling of the dead, it was no longer necessary to give it those spacious prooortions, that we have admired in the domed tombs. If it were empty, the soul having flown away to Hades, why should one continue to accumulate treasures, like those found in the excavations of the Mycenaean acropolis? Ashes enclosed in a vase also require much less space than a corpse, and to place this vase under shelter from every insult, it was necessary for a hole to be dug in the earth.[1] If man did not have everywhere the desire that his memory should survive him, this hole would be t the entire tomb; but men desired that a visible mark should indicate to future generations the place where reposed the remains of the prince or of the war chief; witnout an inscription, there was the tumulus rising above the surface of the soil, that attracted the attention of the passer, and induced him to ask the name of the hero, for whom had been erected the monument.[2] This tumulus was called the sign (sema). This term finally in current usage came to designate the funeral mound, when it referred of obsequies. Men spoke of raising a sign, or rather of depositing it, because it was made of heaped earth and pebbles, placed on a base of great stones, and surrounded at the outside by great blocks, that must prevent the materials from sliding.[3]

Note 1.p.45. The bones of Patroclus were collected in a golden urn (Iliad, XXIII, 253), and those of Hector in a golden c casket (XXIV, 795); then they were deposited in a pit (XXIV, 797).

Note 2.p.45. This preoccupation of making an eternal memorial was divined in the words of Agamemnon addressed to Achilles, in relating to him how were celebrated his funeral rites under the walls of Troy:-- "Around thy bones, we, the sacred army of the Argives, skilful in handling the lence, we piled up a great and beautiful tomb on a projection of the shore of the broad

Hellespont, so that it was visible afar at sea for the men that are born and for those that will then come. (Odyssey, XXIV, 80-84)

Note 3.p.45. Nowhere is the method followed more clearly indicated than in these two verses of the 23 d book of the Iliad. (255-256).

The material of this substructure is specified in the 24 th book (797-799).

These tumuluses with their rounded slopes covered by turf, d differ little from each other except in size and by the dimensions of the stele placed on the summit of the mound. When he describes the obsequies of Patroclus or those of Hector, the poet does not mention these steles; but this is because he does not enter into all the details of the ceremony; It suffices for him to recall the principal circumstances. The placing of the stele seems to have been required; it can be inferred from a f formula twice repeated in the Iliad. When Zeus decides to allow his beloved son Sarpedon to succumb under the blows of Patroclus, he announces that Death and sweet Sleep will carry him away into Lycia, "where his brothers and friends will honor him by a tumulus and a stele; for that is the homage due to the dead."[1] The custom of marking by a stele the place where the dead has been interred dates back to the preceding age. The stele we found at Mycenae in the funerary enclosure of the acropolis and in the rock-cut tombs;[2] We have even recovered some indications leading one to suppose, that it also surmounted the dome of the great tombs built in the lower city.[3] The stele is then a rough stone or a stone cut with smooth faces; but sometimes one of these faces is decorated, either by ornamental motives or by figures, that recall the favorite occupations of the deceased.[4] Were there still found in the time of Homer on the steles, drawings and representations of that kind? Nothing gives reason to think so. When Elpenor expresses to Ulysses the desire, that a distinctive sign may mark his tomb in the eyes of men, what he desires is, that there should be raised on his tomb the oar, that he has so long held in his hand.[5]

Note 1.p.46. Iliad. XVI. 458, 674.

Note 2.p.46. Histoire de l'Art. Vol. VI, p.547,588 763-775.

Note 3.p.46. The same. Vol. VI. p. 601.

Note 4.p.46. The same. Vol. VI. Figs. 359,360,361,362,364.

Note 5.p.46. Odyssey.XI. 75-78; XII. 10-15.

The erection of the mound had then entered so much into the customs, that it wa not omitted even when one could not have the dead on the pyre. In that case, men believed themselves r relieved of a duty by constructing the tumulus: although that was empty, it would prolong the memory of the dead; the honors rendered to that fictitious tomb, even if not having the same efficacy as cremation and interment, while awaiting better, would be a satisfaction accorded to the wandering soul. Telemachus proposed to do that on the day when he obtained the certainty of the death of Ulysses; he erected a cenotaph to him.[1]

Note 1.p.47. Odyssey. I. 290-292; II. 220-223.

If the development of conceptions of the kind of those that we have analyzed could have been subjected to the rules of a r rigorous logic, the worship of the dead would have ceased by full right, where the rite of cremation prevailed. Every offering is interested. The sacrifices offered on the tomb had the object of ensuring to the living the good offices of the dead; when they were shut up in Hades, one would have no further reason to make gifts to them; thus in Homer one finds no allusion to a worship that must be continued on each anniversary on the tumulus erected to the hero. Yet it is again the ancient belief, that inspires Achilles, when in the evening of the day that he killed Hector, he made the blood of the victims run around the body of Patroclus, when on the morning of the morrow the Myrmidons cut their hair and scattered it over the body, when Achilles places his own hair in the hands of his friend, when finally around the pyre, that he sprinkles with oil and honey, he sacrifices sheep and oxen, four horses, two dogs that had belonged to Patroclus, and twelve young Trojan prisoners.[2] Does not one feel there still in these libations and this slaughter, the persistent empire of the primitive idea, of the need that he felt to furnish the dead with a nourishment, that would prevent him from perishing by inanition, and for companions that should serve him in the tomb?

Note 2.p.47. Iliad. XXIII. 34.

Note 3.p.47. The same. XXIII. 135-153; 166-176.

Thus in princely funeral rites, many traits also recall the preceding regime, at the expense of one of those inconsistencies, that embarras little the feelings and the imagination. Yet the adoption of a new rite could not have failed to have

its effects. From the moment that one no longer believed that the dead inhabited the tomb, why did he deposit objects there, which would have no utility to it? Hence the custom of burning with the dead the clothing and arms of the deceased, instead of burying them in a vault. "Burn me with my arms", said Elpenor to Ulysses, "with all that I have."[4] Likewise when Achilles slew Eetion, father of Andromache, "he did not despoil him," says the poet: A religious respect forbade him:"but he burned him with his arms of beautiful work, and built a tumulus for him".[5]

Note 4.p.47. Odyssey. XI, 74 XII, 13.

Note 5.p.47. Iliad. VI, 417-419.

In the case where the rite of cremation had prevailed everywhere with the consequences that it comprised, the Greek cemeteries of the classical age would have nothing to teach us; the piety of the successive generations would not have accumulated those precious deposits, where archaeologists have found the best of their prizes. By good fortune, the rite of interment was maintained beside that of cremation, and even when man made use of the second, it was the first that always remained the master and controller of the tomb, Where it coexisted with its rival, even with those that had dropped it, it continued to i impose practices, that in theory found in it alone their justification. If it thus retained until the last days of antiquity its tacit and sovereign empire over the souls of the people, by a stronger reason its authority must be scarcely weakened at the ending of the epic period. Thus in regard to the condition of the dead, while professing the belief whose first outlines are found in Homer, Greece did not at all adopt the type of burial suggested by that belief. If this type be the only one mentioned by Homer, this is because during a certain time it was in favor in the cities of Aeolia and of Ionia in which epic poetry assumed its final form; but also it must have been but a temporary fashion, and a little later, they returned to the cavity cut in the rock and more or less richly furnished. The model that the authors of the Iliad and of the Odyssey had under their eyes and scarcely recognized merely in the mounds, that still rise at several points on the plain of Troy.

Schliemann made excavations in all those tumuli, as well as in the hill in the Chersonesus of Thrace, to which is attached

the name of Protesilas.[1] These excavations permit those monuments to be divided into two kinds. Some are merely imitations due to the caprice of a Hadrian or a Caracalla. We do not have to occupy ourselwes with these imitations; interest only attaches to those tumuli, that seem to date in a time near that of H Homer. Such appears to be the case for that one 250 paces from the shore of the Hellespont at the foot of cape Sigeia, which still rises about 40 ft. from the level of the plain. The position occupied by it allows it to be identified in all probability with the mound alluded to in the Homeric poems, and that all antiquity has pleased to regard as the tomb of Achilles. It is indeed a mound of moderate dimensions, that was the aim of the words placed by the poet in the mouth of Achilles:- "I do not advise you to make the tomb too high; but that it be suitable; finally, you will make it wider and higher, you Achaians, who shall survive me and remain in the ships with numerous banks of oars".[1] The diameter of this mound at base is only 98.4 ft. A well sunk from the summit to the rock found nothing, except toward the bottom were clods mixed with pieces of sandstone, above which layers of clay alternated with a blackish soil. Neither charcoal nor bones; if the mound received the ashes of the dead inclosed in a vase, this deposit was not found in the course of the workmen. Was this a true tomb or was it a cenotaph? That can only be known by entirely destroying it. This would be much trouble for small benefit, and perhaps one would regret having caused to disappear a monument, toward which in memory of the poet have been turned the eyes of so many obscure or illustrious travelers. (Fig. 1).

Note 1.p.48. Schliemann. Ilios. Chapter 12.

Note 1.p.48. Iliad. XXIII. 245-248.

However partially it has remained, the excavation sufficed to fix approximately the age of the tumulus. Schliemann divides into two groups the lessons that he collected there. The first comprises the very numerous fragments of badly burned vases with thick walls, of gray or blackish paste, in which he recognized a common pottery fabricated in the Troad from the most remote epoch until the origin of the Aeolian city. The second group is formed of the remains of a finer and better burned pottery with a red or black glaze decorated by blands of a dark tone, that rise from a light ground; what this pottery recalls

to him is that found by him in the Mycenaean acropolis outside the royal tombs.

Shafts sunk in several other tumuli have given nearly similar results. They were made in a mound situated near that of Achilles, and that Lechevalier named the tomb of Patroclus, in the Pasha, Besika and Karagatch mounds or tomb of Protesilas. Dimensions vary:- thus the Besika mound is 262.5 ft. in diameter and 47.6 ft. high; the Karagatch mound occupies a still larger area. In the last hill the pottery is ornamented by incised lines filled by a white powder with a more primitive character; but with these shades the resemblance is very marked. No chamber is made in the thickness of the mound; neither remains of structures, human remains nor even vestiges of the pyre. The tomb is everywhere reduced to be merely a heap of earth; this earth was piled over a cremated body of which no trace h has been found, or indeed it was placed as a seal on a memorial, that the piety of the survivors proposed to enclose within the tumulus, if one may so speak.

Nowhere but in the Troad and in Thrace have been found a tumulus like those described by the poet;[1] elsewhere that have been found tumuli that are rightly attributed to the period c closely followed by the Dorian invasion, the type of those tombs is not that which we have defined from the Iliad and Odyssey; with some secondary differences, it is much rather that of the Mycenean age, as stated in studying the Attic cemeteries, and especially the cemetery at Athens, which separates the inner from the outer Ceramicos. There have been opened many tombs containing pottery of a very particular character, that archaeologists are in the habit of terming pottery of the Dipylon, because in the interments near the gate so named (the double gate), examples of this pottery have been collected in greater number than elsewhere.[1] the oldest of these tombs are those of generations, that by the date when they lived, could not be very distant from those Ionians of Homer, in whose tales is mentioned only a single rite, that of cremation.

Note 1.p.50. Indeed in Asia Minor is a cemetery where the rite of cremation was alone employed, and that appears to belong to the period now occupying us; it is the Carian cemetery of Assarlik between Halicarnassus and Myndos. Described by Paton and Dümmler, it was well studied by Helbig, who has shown

what analogies the enterments there present with those in Homer. (Ueber die Nekropole von Assorlik in Karien; Nachrichten d. K. ges. d. Wiss. in Göttingen; Phil.-hist. Klasse. 1896. p. 233 252). The reason why we do not insist here on this cemetery is, that it does not seem to us proved as Helbig thenks, that these tombs are those of the first Greek colonists, that established themselves on the shores of Caria; we incline rather to see in this cemetery that of one of the lod Carian cities, which there preceded the Gree cities, and whose walls are found at several places in that country. (Histoire de l'Art. Vol. IV. ,.viii. C3).

Note 1.p.51. Of all statements arising from these excavations, the most developed is that treating of the excavations made in 1891 under the direction of M. M. Stais and Kawerau on the Sapountzaky estate. The results of those researches have been given by MM. A Brückner and E. Persius under the title of Ein Attischer Friedhof. (Athen. Mitt. 189 . p. 73-208; Pls. VI-IX). Especially to that Article shall we constantly have occasion to refer. Also more than one fact is to be found in the Memoir that M. Hirschfeld first defined the characters of the pottery of the Dipylon. (Ann. dell. Inst. 1872. Vasi Arcaici Ateniensi. p.131-182). Finally, a very precious point of comparison is furnished by the results of excavations made by M. Philios at Eleusis on the acropolis; he found there a little cemetery contemporaneous with the most ancient tombs of Ceramicos. (Greek text). On the cemetery of Salamine belonging to the transition between the Mycenaean and Homeric ages, see Kawadias, atalogue des Musees d'Athenes; 1895. p. 25-26. Interment and cremation were practised there at the same time.

Now not without surprise does one verify, that if about this time the rite of cremation was not unknown in continental Greece, it was practised there but exceptionally. On the 19 tombs of the Dipylon uncovered in the campaign of 1891, there was only one in which was certainly buried a cremated dead person, and yet it is one of those that from the character of their equipment appear as latest;[2] in all others were found entire skeletons or bones not calcined by fire. The rite of cremation never prevailed entirely in the antique world.[3] The poor seem to have always preferred interment, that cost less; but they were not alone in interring their dead.

Note 2.p.51. Ein Attischer Friedhof. p. 104-106; 148-150.

Note 3.p.51. This is confirmed by the result reached by M. P Paolo Orsi, when he excavated the oldest cemetery in Syracuse, that comprises the tombs of the 7 th and 8 th centuries, and which is called Del Fusco. He found 122 interments to 5 cremations. (Notizie degli scavi. 1895. p. 110-111).

In the cemetery of the Dipylon until the 6 th, 5 th and 4 th centuries, the cremated dead are mixed with those interred; y yet all these tombs evidence a certain freedom.[4] For Greece itself and other countries, the texts of the authors attest the simultaneous use of the two rites.[1] While at Rome most of the dead were laid on the pyre, one of the greatest families of the city, the Cornelia gens, never gave its dead to the fire. Sylla was the first Cornelius that was burned. From fear of popular vengeance, his reltives departed from the established custom for him.

Note 4.p.51. Brückner and Pernice, in Athen. Mitt. 1893. p. 78-79.

Note 2.p.52. Solon, supporting before the Lacedemonian arbiters the claims of Athens, which disputed with Megara the ownership of the island of Salamis, drew an argument from the fact, that at Salamis as at Athens, the corpses in the tombs had their heads turned toward the west, while the Megarans turned them toward the east. An envoy from Megara contested that assertion; but the objections presented by him assumed the current usage of the rite of cremation, both in Attica and in Megaris. (Plutarch. Solon. X. 4-5). Herodotus (V. 8) mentions the mixture of the two rites among the Thracians.

Note 2.p. 2. The stone slabs were found in place at Eleusis. (Ephemeris. 1889. p. 187). For the arrangemen of the tombs of the Dipylon, see Ein Attischer Friedhof. p. 94, 105, 112, 133. There were noted in the earth over those pits of the Ceramicos traces of color, that were explained as being the traces of c clay laid on the planks that covered these pits. (p. 150). What proves that there was a chamber with its ceiling is the tripod found in the tomb near the abattoir. (Athen Mitt. 189 . p.41 , pl. 14); such an elegant article would not have been exposed to contact with the moist earth, which would have soon corroded it.

Like the tombs that we found at Mycenae in the enclosure near the gate of lions, the tomb of the Dipylon is a pit dug in the

earth and sometimes lined with dry stones, that received either stone slabs or wooden floors. The projections made at mid-height of the longer sides must have supported this covering. Sometimes the skeleton was deposited in a clay vase; this was done for a child and even for adults.[2]

Note 2.p.52. The same. p. 99, 133. The wine jar that contained the remains of a child is 4.6 ft. long and 5.0 ft. in its greatest diameter. The dead man buried therein could only be crouching with bent knees. Likewise at Eleusis. (Ephemeris, 1889. p. 188).

The pits of the Athenian cemetery are less deep than are those of the necropolis in which were buried the predecessors of the Atrides; the bottom was only 6.6 ft. below the surface, and the average dimensions of those pits were only 6.6 ft. long by 4.9 ft. wide. This difference is thus explained. Excavation, built chamber surmounted by a dome or cavity arranged in the rock, t the Mycenaean tomb was that of a family; the tomb of the Dipylon rarely received but a single corpse. At Eleusis, two or m- three bodies were sometimes placed in the same pit.[4] No systematic orientation, neither at Athens nor Eleusis; the dead have their heads placed indifferently toward north or south, east or west. At Athens, the corpses were extended at full length; at Eleusis they sometimes lay on the left side with legs crossed.[1] Neither at Athens nor at Eleusis is there a trace of a wooden coffin; the bodies must have been wrapped in a simple shroud.

Note 4.p.52. Ephemeris. 1889. p. 190.

Note 1.p.53. The same. 1889. p. 174, 174.

The attic tomb is then more modest than that of Mycene; but like that it evidences the same ideas and the same beliefs. Sacrifices appear to have been offered to the dead before interment; there are found here the ashes and bones of animals, either in the earth filling the pit or in the places, where were placed the food prepared for the occupant of the tomb.[2]

Note 2.p.53. Ein Attischer Friedhof. p. 127, 128, 132, 141, 147. Philios also recognized at Eleusis the remains of sacrifices. (Ephemeris. 1889. p. 184).

Various liquids, water, milk or wine, must have been poured into ordinary vases of heavy form and without ornaments, whose bottoms are still blackened by smoke; before passing into the tomb, those vessels had already long served on the hearth of

the hearth.[3] On the contrary, the hydrias found in several tombs are very carefully made.[4] They have a very elegant curvature and are decorated by paintings. It is suggested that these hydrias contained the water for the bath, that the young man or girl occupying the tomb would have taken on the eve of marriage, if death had not come earlier. We shall have here the most ancient form of those bath vases, that in the classical age were customarily placed on the tombs of the unmarried persons, men or women, and that later were chiseled on the marble of the steles.[5] There is further nothing more than a mere symbol in the representation of the bath vase; but for this symbol to have been familiar to every mind, was it not necessary for a preceding time, when the act thus represented was really performed, when the bath was actually poured into the funerary bath vase and enclosed in the tomb?

Note 3.p.53. The same. p.117, 120; pl. viii,2.

Note 4.p.53. One of the 19 tombs had the hydria. (The same. p. 143).

Note 5.p.53. The same. p. 144-14[illegible]

All these vessels were arranged as if the master of that dwellin actually had used them. Near the vessels containing the beverages were cups of various sizes, and in the neck of the hydria was placed a sort of ladle, that served to dip out the liquid filling the great receiver.[6] The little phials were filled with perfumed oils; when found, one of them still had its clay stopper.[1]

Note 6.p.53. The same. p. 145.

Note 1.p.54. Fin. Att. Fried. p. 115.

The dead were decorated by jewels like those he had worn in life, but less heavy.[2] If it were a man, he had at his side his iron sword suspended by a shoulder belt, and beneath his hands were his daggers and his spears.[3] If it was a woman, near her were placed boxes decorated by overlays of bone or ivory, in which she formerly kept her jewels and toilet articles.[4]

Note 2.p.54. The same. p. 101-128.

Note 3.p.54. The same. p. 107, 108, 133. Rayet, who was at Athens at the time of the excavations of the Ceramicos, also was a witness of the presence in the most ancient tombs of a "heavy sword with a wooden handle, of a slender knife and of two javelin heads; all those arms were of soft iron."

(Histoire de Ceramique. p. 23, 24). Likewise at Eleusis.(Ephemeris. 1889. p. 18 .

Note 4.p.54. Athen. Mitt. 1893. p. 120-125.

There were not taken from those graves the statuettes of terra cotta, rude images of a diety protecting the dead, that abound in the tombs of the Mycenaean age; but at least one of those pits has yielded little figures of ivory, that appear to have played the same part.[5]

Note 5.p.54. Ein Att. Fried. p. 129-131. Hist. de l'Art. Vol. VII. pl. 3.

Where the rite of cremation was employed, the equipment retained the same character as in the tombs of intercensus. The pit is similar, and there was deposited an entire assortment of the same vases. There is only one difference. The calcined bones are enclosed in a bronze urn deposited at the very bottom of the pit.[6] Elsewhere that urn was supported by a tripod of very careful execution. (Fig. 2).[7]

Note 6.p.54. The same. p. 91-93, 104, 102.

Note 7.p.54. Athen. Mitt. 1893. p. 414, 415. The urn was not found in place on the tripod, which had been overturned.

Particularly by its external part, the tomb of the Dipylon is distinguished from the Mycenaean tomb. It likewise recommends itself by a visible sign of the affection of the survivors; b but here that sign was neither the tumulus, as under the walls of Troy, nor the decorated stele of Mycenae. If there have been found a Athens, Eleusis and in other cemeteries, some stones in the form of slabs, and there is reason to believe that these were formerly erected over the tombs; these were stones almost rough, that bear neither figures nor mouldings of any kind. (Fig. 3).[1]

Note 1.p.55. p. 154. Ephemeris. 1889. p. 175, 179, 184.

The art that suffered least from the impoverishment of the Greek world and the lessening of industrial activity was that of the potter; the needs to be satisfied were too variedfor it ever to have ceased, even in the most troublous times. That r relative superiority of the ceramist suggested the idea of requiring from it the monument, which formed the visible portion of the tomb. Terra cotta thus replaced the chiseled stone; a c clay vase most frequently served as a monument.

In the history of the Greek tomb, there is no other example

of such an arrangement; hence it was not respected at first. A Above the tombs were gathered fragments of large and much ornamented vases; but men imagined, that according to a custom previously mentioned, those vases were broken on the day of the f funeral rites and cast into the grave.[2] That was an error. Men learned this when one of the tombs recently excavated one of these vases, that filled the function of stele, was found in the same position assigned to it at the moment of completion of the obsequies, and by means of that discovery has been restored the primitive appearance of all that entirety. Fig. 4.[3]

Note 2.p.54. Rouet and Collignon, Histoire de la Ceramique grecque. p. 24. Philios had already noted that the fragments of very large vases, like those of the Dipylon, were found at a level sensibly higher than that of the vases of smaller dimensions placed at the bottom of the pits; but that peculiarity was not explained; he believed that those great vases had served as ossuaries. What compelled him to abandon that conjecture was the fact, that the fragments of those vases appeared at a slight distance below the actual surface of the ground. (Ephemeris. 1889. p. 174).

Note 3.p.54. In the added sketch has been restored only the floor, added by our artist, and the upper part of the vase, already restored by Brückner.

Above the urn or skeleton and supported by a floor was a certain thickness of earth; but the pit was not entirely filled. That remained half empty, and in that cavity at about 3.3 ft. above the bottom of the pit was placed the vase, that took the place of a monument, sometimes a great amphora with four handles and sometimes a cratera; it had the foot set in the filling, which gave it a bearing; for half or two thirds its height, it was protected by the walls of the pit; so that one of them remained intact up to the level of the banks of the pit; the upper part alone, that rose above ground, had been crushed. In spite of the fragility of the material, those clay monuments y yet offered certain guarantees of duration, while the cemetery was protected from profanation by the pious care of the families. Those vases were of very great dimensions; one of them has been restored at the museum of Athens with a height of 5.9 ft.; another from the same place is 5.25 ft.; that rising above

the tomb as represented by us was 3.6 ft. To vases of that height it was necessary to give very resistant walls: all these vases are more than 3/8 ins. thick; thus they were not at the mercy of a slight accidental shock; to break them required blows of a stone or a hammer.

However, even if in these conditions the vase had not the solidity of the stele, it offered the advantage of furnishing the artist a means of expression more in harmony with his inexperience. The scenes that he desired to represent to define the monument, he had less difficulty in tracing on the clay with the brush, than to model them in the calcareous tufa. The drawing was indeed singularly awkward, but it was impossible not to seize the meaning of the pictures decorating the bodies of those vases, paintings with themes supplied even by the funeral ceremonies. These ceremonies were divided into several acts by the painter, each of which was represented separately. There was first the exposure of the body at the house, the prothesis, with what Homer calls the groaning; the dead was extended on his bed with face uncovered; the relatives, friends and the women of the family, beating their breasts and tearing their hair, addressed to it those passionate apostrophes, whose tradition is preserved in Greece in the "mirologhi" of the Maniotes, that greatly resembles the "vocero" or appeal of the Corsicans (Fig. 5); but what positively attracted the multitude was the transfer to the cemetery, the "ecphora". The couch with its funeral burden was placed on a car drawn by horses led by men walking before them. On the wooden platform drawn along the streets the mourners, some kneeling and the others standing, were grouped around the body, uttering continued screams (Fig. 6). The funeral car was a sort of moving theatre, like that on which Thespis later displayed budding tragedy in the towns of Attica.

There were perhaps also games; men ask if in the series of cars represented on those vases must not be seen a preparation for the races, that occurred after the interment of the corpse. (Fig. 7). The prize of the race would have been one of those tripods sometimes represented on the necks of the amphoras, and an example of which was found in one of the tombs of the Dipylon (Figs. 2 and 8). These equestrian games, with the tripods contested there would still be a trait connecting the age

of the Dipylon with the Homeric age, when were rendered to the princes honors, the custom of which was lost among the historical Greeks. The apparatus of the obsequies at Athens continued to be simplified. That difference between the ancients and the new customs was taken into account by the Athenians, it is recalled by the author of the dialogue called Minos, that has come to us under the name of Plato:-- "Thou knowest", says one of the speakers, "that thou hast heard related what were once among us the rites observed concerning the dead; before the procession we slew victims; then we caused the marching of women carrying vases for the libations and the bath. Nothing of all that occurs now".[1] When Solon enacted a law regulating the order of the funeral rites, that limited the cost and forbade too noisy an expression of sorrow, he only had to cidify the custom, only to record the changes begun to be introduced in customs.[2] Minds were cultivated and refined; men inquired if there was not something slightly barbaric in that profusion of wealth cast into the tomb, in those piercing cries uttered in public, in those immoderate and almost immodest gestures, whose violence caused women to forget even modesty; it was felt that greater discretion and restraint better suited the sadness of the last farewell.

Note 1.p.58. Minos. p. 1. On the meaning of the word here employed by the author to designate women, literally scattering, see Etymologycum magnum.

Note 2.p.58. Plutarch. Solon XXI. Demosthenes against Macorcatos. 62.

Before those scruples originated, a real spectacle was the burial of deceased of high rank, as divined from the enormous vases that we have described. Those must be very dear, and could only be executed for the first personages of the city, for the chiefs of the "naucraries"; in the naval scenes figured in the lower series of the decoration is recognized an allusion to th title borne during life and to the maneuvres directed by the men of noble race, in memory of whom had been erected these m monuments.[2] The entire city gathered to the funeral processions of the Eupatrides as to a festival.

Note 3.p.58. Fin Att. Fried. p. 152, 153. The exercises over which presided the naucraries are represented here, as on the Attic steles of the 6 th century; a horse is led by a groom

near the base of the cippus, indicating that the deceased belonged to the class of knights.

The vases that furnish us with this precious information had another purpose, that reveals a curious peculiarity:- they have no bottom or the bottom is pierced.[1] Is it supposed that this bottom was omitted only to save labor? That is not probable w with the mastery of the workmen tha fashioned articles of that height. If they did this, it was for motives of a different k kind. The arrangement of the tomb of the Dipylon implies the worship of the dead, a worship having one of its most important rites as that of the nourishing libation. One recalls those p pits with walled sides, in which we found at Tiryns and at Mycenae cavities into which was formerly poured the blood of victims, wine and milk;[2] at bottom only an earthen utensil through which to reach their aim, passed the liquids intended for the nourishment of the occupant of the sepulchre.[3] The first vases placed over those mortuary cavities must have been to replace those basins of masonry. Instead of distributing at random the libation on the ground, it was thus caused to run into a receiver placed over the corpse, and which could pass through the orifice by which the living communicated with their dead. The commonest jar sufficed to fulfil that office; but once that t the vase was there, placed in the cemetery, it was enlarged and was decorated to ma e of it at the same time the sign of the tomb, the evidence attesting the supreme homage rendered to the dead by the family and the city.

Note 1.p.60. This fact had already struck Hirschfeld, Koumonondis and Phillos, who proposed no explanation. (Annali. 1872. p. 164. Practica. 1873-4. p. 18. Aphemeris. 1889. p. 175 177). This was given by Brückner and Pernice, p. 155.

Note 2.p.60. We forgot to state in the preceding volume (VI), that these hollow altars or sumpsbore the name of "eschara" among the Greeks. Scholiast of Euripides ad Phoenissas; V, 274. (Greek text. See Hesychius). Porphyros says that the eschara served for sacrifices offered to the Chtonian gods and to heroes. (De antro nymphorum. Chap. 6, p. 7).

Note 3.p.60. Histoire de l'Art. Vol. VI. p. 283, 284, Figs. 81, 82; p. 323, Figs 102, 103; p. 343, Fig. 114 A; p. 571 etc.

If one had on the subject of the cemeteries of the rest of Greece such precise data, as those given by us on the graves

that contain the vases of the Dipylon, it would perhaps be possible to indicate other tombs contemporary with those at Athens and of Eleusis; but it is very probable, that for that epoch the cemeteries of continental Greece and of the islands were not distinguished from those forming the subject of this study except by traits of a very secondary importance. Thus in Boetia has not been found a trace of vases of exceptional dimensions, that were placed on tombs. That custom seems to have remained peculiar to Athens. At Thebes and in the other cities of the same region was continued the use of the slab placed on the grave. Thus on a vase, certainly from a Boetian workshop, is seen below the representation of the funeral ceremonies the tomb indicated by a cippus, whose form recalls that of the Mycenaean steles, and more yet that of the steles of Bologna. At the right and left of that stele are the two horses of the dead, facing each other. (Fig. 9).

In Boetia, Cyprus and elsewhere, have beer opened many graves, a certain number can date back to the period occupying us, and yet no more than in Attica, the tomb has neither the visible form nor the internal arrangement of that described by Homer. In spite of the appearance of the new dogma and of the new mode of burial, the Greek tomb then retained during even the period when its ideas changed, the character impressed upon it by the primitive beliefs and the practice of interment.

Yet if the tomb at the Ceramicos of Athens does not have the same size as at Orchomenos or at Mycene, if it no longer comprises neither richly decorated facades nor majestic domes, and not even deep grottos excavated in the depth of the tufa, one can indicate two reasons for this difference. The first is that the social condition in Greece after the fall of the Achaian dynasties, is no longer what it had been while those reigned in their impregnable castles. So far as one can discover the condition of the Hellenoi world during the two or three centuries that followed the Dorian invasion, that was a time of troubles and c wars, since when the conquest was completed, and that occurred the subsidence of a moderate and rustic life. Those opulent princes, intent on building, lavish patrons of artists and of goldsmiths, such as were the Achaian kings, Greece never saw again under another name, excepting much later under the tyrants of the 7 th and 6 th centuries, the Periander,

Clistenes, Polycrates and Pisastratides. Until that moment parcelled into little groups, that after recent shocks sought their equilibrium, it had neither powerful chiefs, illustrious by distant adventures and enriched by war, oligarchies paiently ambitious, nor bold and ardent democracies. The former royalties with the prestige of their secular antiquity, are dead to never recover, and the city as an association of equals only prepare its framework. Elsewhere, among the Ionians as among the Dorians, wealth and authority are in the hands of the nobles, that were called at Athens the Eupatrids or "sons of good fathers". Those are the tombs of these nobles that have been found in the Ceramicos, with the monumental vase surmounting them, the pottery and caskets, the arms and jewels deposited there. It was no longer necessary to distinguish them from those of the common people; but those aristocratic interments must all be nearly similar; in giving to one of them unusual dimensions, one would have risked the injury of public feeling. Affairs must occur in the rest of Greece as at Athens. If it was proper in the privileged class to ornament and equip the tomb of the chief of the family, it would have appeared evil to place beyond equality in death, one of those that during life had only his part of the charges and honors at the disposal of the city. Whatever the desire that the affection of the survivors had to indicate itself by the luxury employed in the arrangement of the tomb, it was constrained to consider that situation; a certain equality and a certain uniformity were imposed.

There is also to be calculated the effect of the change produced in ideas on the subject of the life after death. In spite of the resistance of the rite of cremation, the beliefs from which it sprang could not fail to ente into minds everywhere. It is true that these did not abolish earlier conceptions, that were profoundly imoresse, if one may so speak, in even the marrow of thought; They were added to them. The relative or friend that had been lost, one represented successively or even entirely domociled in the tomb, and mingled in Hades with the innumerable multitude of the dead. Whether one of these hypotheses was the negation of the other, men cared little. When the imagination enters this domain of mystery and of dreaming, where no conjecture can submit to the test of experience, is not embarr-

embarrassed by contradictions. Yet from the day when, at least at moments, one represents the dead as wandering on the banks of the rivers of Erebus, or later as tasting in that sojourn the joys reserved for the blessed, the attitude of the mind before this problem, that never ceased to torment it, was no longer what it had been previously. Doubtless men did not act as if the tomb contained only mute and insensible dust: they continued to equip it with the same articles and to pay the tribute of some offerings; but they no longer continued to see as clearly the deceased pursuing in the shades, by the virtue of the libation, the existence that he had previously led beneath the sun. Therefore some uncertainty, a sort of hesitation unconfessed, but which no less must have its influence on funerary architecture. No longer feeling the dead near himself, one was tempted to no longer devote himself to such painful efforts to make the tomb spacious and rich; especially men became unaccustomed to throw with full hands into it the precious metals, for which it was easy to find a better use. The excavations formerly found in our course no longer present the imposing dimensions and the sumptous decoration, that we have admired in sepulchral domes; the jewels that we shall see found will seem to us very light in comparison to those, that we have weighed at Mycenae.

4. Religious Architecture.

Vainly have we sought the temple on the sites of the fortresses of Tiryns and Mycenae, among the remains of the buildings in those limited areas, and what we do not learn from an inspection of the ruins, we have no resource to demand from written documents; there exist none dating back in that epoch. On the other hand the monuments represented have supplied us with some information. We have found there altars, before which are persons making a gesture of adoration.[1] Some inlays in metal alone, collected at Mycenae, appear to present the image of an edifice consecrated to worship;[2] but those little plates are of the number of works to which one is most tempted to attribute an oriental origin, and on the other hand if admitting them to be of native make, they only represent a building of very small dimensions, a large hut formed of an assemblage of beams. According to these data we have believed ourselves able to conjecture, that perhaps then were chapels in which were preserv-

certain objects to which was attached a particular veneration, either a sacred stone or the more or less rude image of some god, but that the ceremonies of worship were celebrated in the open air in consecrated enclosures, analogous to the high places of the Semites. For that purpose they gathered around the altar; the sacrifices were made on the bomos, a massive projection of stone or of turf.

Note 1.p.65. Histoire de l'Art. Vol. VI. Fig. 328[23], 429.

Note 2.p.6 . The same. Fig. 337.

It does not appear that matters changed much in that respect during the succeeding period, although by the creation of those divine types already seen in Homer, so clearly defined, the religious idea is singularly developed. The temple bears the name of neos or naos; but it is still of but slight importance. In the entire Odyssey it is not mentioned once. On the contrary, in the Iliad allusions to the temple of Athena occur several times; but the poet that describes the palace of Priam, its very careful construction and its numerous chambers, gives no indication permitting one to form an idea of the dimensions and of the appearance of the temple. All that he specifies is, that the edifice is situated on the summit of the acropolis,[3] and that it is usually kept closed; when Hecuba comes to deposit her gifts there, the priestess opens it with a key in her charge. This sanctuary contains a statue, doubtless a xoanon of wood;[4] The Trojan women placed on its knees the peplos, that they had embroidered in its honor.[5] Apollo likewise had a temple in the citadel; there he brings and places in the care of Artemis and of Leto his favorite Eneas, whom he has just brought from the field of battle and torn from the hands of Diomede; the temple is termed a great sanctuary.[1] Of the temple of Apollo Sminthius, whose priest is Chryses, all that the poet finds to say is, that it is graceful.[2] It is in vain for Zeus to be the greatest of the gods, nowhere is found an express mention of a temple consecrated to him. Zeus is moved by the fate of Hector, who goes to fall beneath the blows of Achilles, remembers that the hero "has caused to be burned in his honor the thighs of many oxen, sometimes on the heights of Ida with numerous ravines, and sometimes on high within the city";[3] but the relation established by the poet between the holocausts offered on the summits of the mountain and those made on the most elevated poin

of Pergamus rather forms the idea of simple altars, erected at the time the sacrifice was prepared; it is difficult for one to admit, that there was a temple on each of the heights of Ida.

Note 3.p.65. Iliad. VI. 86-87.

Note 4.p.65. The some. VI. 89, 298.

Note 5.p.65. The some. VI. 92, 303-305.

Note 1.p.66. The some. V. 446-448.

Note 2.p.66. The some. I. 39.

Note 3.p.66. The some. XXII. 169-172.

The so-called Homeric hymns are less ancient than the Iliad and the Odyssey; still at least some of them must date back to a time very near that when the two great epic periods began to extend throughout all Greece. Such is particularly the case for the hymn to the Delian Apollo, the masterpiece of that poetry. It was composed by a Homer of Chios, and all know the enthusiasm with which the poet boasts of the grand bea ing and beauty of his compatriots. He says that whoever sees them, gathered at Delos in their festal attire would be tempted to take them "for the immortals, forever exempt from the misfortunes of old age."[1] Now toward the 8 th century the Ionians, at last firmly established on the coasts of Asia Minor and in the largest islands near them, began to seek ou lets outside, launched themselves boldly on the sea, to enrich themselves by commerce and by the founding of distant colonies. The feeling of pride that bursts forth in the epilogue of the hymn is indeed that, which must be felt about that time by an ardent and youthful people, which admired itself for the intelligence and strength displayed, and for the rapid rise taken by its fortunes.

Note 4.p.66. Hymne o Apollon Delien. 151-152.

Thus we should freely believe that this hymn is nearly contemporaneous with the first olympiads. In the inquiry that we pursue, it therefor leads us a little farther than the epic period did. Now what further results from a passage of the hymn is, t that then the temple still occupies only a secondary place in the entirety of the arrangements that man had thought to create in view of worshi fixed limits, whose amplitude and happy arrangement added to the effect of the religious ceremonies. Nothing is more significant in this respect, than the expressions employed by the poet to recall how the homage and prayers ascend to Apollo. He says:- "Thou hast many temples and sacred

forests rich in trees; thou likewise cherishest all the heights from which the view extends afar and the highest tops of the lofty mountains, as well as the rivers that flow toward the sea; but still it is Delos that most rejoices thy heart." [1]

Note 1.p.67. Hymne o Apollo Delien. 113-145.

The impression left by these verses is, that Apollo then indeed had many temples, yet none that was sufficiently large to attract particular attention. The Delian temple is that most frequented and most famous of all those sanctuaries; now the poet that delights in describing the festivals celebrated at Delos, does not even indicate by a passing glance or by a picturesque adjective the architectural character of the edifice; he only qualifies it by an ordinary epithet, rich. The word t temple, neos, is not even found in the promise by which Latona reassures Delos concerning the intentions of her son, and promises that this island shall always remain the preferred abode of her son; it is no longer merely a question of the altar and of the sacred enclosure. [2]

Note 2.p.67. Greek text. Hymne. 87-88.

Then in each holy place where the faithful assemble, what s strikes the eyes is less the temple itself, the little house of the god, a modest shelter enclosing a very imperfect image or symbol of the nature of a rough stone, than the area whose soil resounds beneath the steps of the dancers, the altar on which is kindled the fire of the holocausts, or the sacred forest with the spreading branches of its evergreen laurels, or the strong boughs of its old oaks. The temple is too small to open to the multitude or even to the procession od singers and bearers of gifts. Sacrifices are offered in the open air, "near the well built altar", [3] and around it the choir performed its rhythmic evolutions. Then they go to repose in the cool shade of the adjacent forest. Thus the forest is a necessary adjunct of the temple. [4] It finally disappears, at least in many places, just as the enclosure or peribolos contracts, when the temple takes the place of the royal palace on the apex of the acropolis, on the narrow plateau termina ing it. How was a forest planted and made to live on the rock of the citadel of Tiryns or that of Athens?

Note 3.p.67. Greek text. Iliad. I, 448.

Note 4.p.67. The formula (Greek) reappears constantly in the

two hymns to Apollo. (Verses 143, 221, 245).

The hymn to the Apollo of Delphi seems less ancient than that in honor of the Delian Apollo; it gives the idea of an already rudimentary architecture. When the Iliad was composed, Delphi under the name of Pytho, was already a very important religious centre. Homer boasted of the treasures "enclosed behind the stone threshold of Phoebus Apollo, the archer, in rocky Pythos."[1]

The "stone sill", a part for the whole, representing the temple for him. This threshold of stone is also mentioned in the hymn;[2] but that enters into more details. The poet relates that an innumerable multitude of men lent the aid of their arms to the architects Trophonios and Agomades, sons of Erginos and dear to the immortal gods, to build the temple of polished stones, to be celebrated forever by the hymn.[3] Apollo himself placed the "wide and very long foundations on which was seated the edifice"; from one end to the other.[4] One divines what importance the constructor therefore attached to that part of his work. Before deciding for Pytho, Apollo had chosen for his temple another site near Haliarte, and there likewise he had commenced by laying on the earth foundations, that the poet characterized by the same epithets.[5]

Note 1.p.88. Iliad. IX. 404-405.

Note 2.p.88. Hymne, 295.

Note 3.p.88. The some. 296-299.

Note 4.p.88. The some (Greek). 294-295.

Note 5.p.88 The some. 255.

At Delphi had been retained the memory of a temple of Apollo, that had the form of a wooden hut.[6] Evidently to that sort of hut do not apply the verses that we have quoted. In the edifice that the poet had in view, stone plays a great part; it forms the foundations, the threshold, and doubtless also the wall of the building, for there must have been best found a place for the polished stones mentioned; but nothing implies that the columns were also of stone. Those supports must have been of wood, like the columns of the palace of Mycene. For a stronger reason, wood also furnished the material for the upper parts of the edifice, the ceilings and the carpentry of the roof. The building was entirely burned in 548 by a "fire that occurred of itself",[1] an accident that presumes a structure into which wood entered for a considerable part.

Note 8.p.68. Pausanias. X. 5. 9.

Note 1.p.69. Herodotus. II. 180; see I, 50.

Some other monuments of the same construction had the opportunity to escape destruction for long centuries, and they were shown in the time of Pausanias as venerable relics of the past. Such near Mantinea was the timple of Poseidon Hippios, that tradition also referred to Agomades and Trophonios. It was entirely built of timbers superposed and framed together. No doors; a suspended cord closed the entrance. Hadrian, the imperial ar archaeologist, to better preserve this curious evidence of the ancient ages, erected all around it a structure enclosing it like a shell.[2] At Elis was shown as a legacy from the same antiquity, a roof supported by pillars of oak. No walls, it being a simple shed. It was stated to be a tomb, that of Oxylos; but it must rather have been a primitive temple.[3] At Metaponte was an old temple of Hera, each of whose columns was made of the trunk of an enormous vine.[4] At Olympia, in the temple of Hera already recognized by the ancients as the oldest religious edifice enclosed within the Altis, one of the two columns placed between the antes of the opisthodome was still a wooden column in the time of Pausanias.[5] This shaft was the last survivor of an entire series of similar columns.

Note 2.p.69. Pausanias. VIII. 10 2.

Note 3.p.69. The same. VI. 24,7.

Note 4.p.69. Pliny. H. N. XIV. 2.

Note 5.p.69. Pausanias. V. 16,1.

We shall not go so far as to derive from these remarks a conclusion, that would perhaps appear rasher than it really is; we infer only that from the 10 th or 9 th century there existed at the foot of Mt. Cronion a first temple of Hera, whose supports may have been again employed in the edifice described by Pausanias, but we insist on showing, that when about the end of the 8 th or perhaps in the 7 th century, there was constituted this Doric style, one of whose most ancient monuments is doubtless the Heraeon of Olympia, its religious architecture was at nearly the same point as during the course of the Mycenaean period. From one age to the other, the customs and practices of the constructor had changed little.

We have already mentioned the rock sanctuary of Cynthe of Delos, and that built against the mountain quite near the pea-

of Ocha in Eubea;[1] so far no pottery has been collected, whose style would allow the reference of those edifices to one date rather than another. Greece has retained several of those old temples, deprived of all architectural decoration, that preceded the invention of the orders. They were retained as evidences of the simplicity of former times. They were not even built of great blocks like that of Ocha; there were some still more humble. Such at Panopea in Phocis was a chapel, whose walls were of crude bricks. That must render still more sensible the rudeness of the masonry was the statue of Pentelican marble, placed there long after the founding of the sanctuary.[2] Such likewise was an old temple of Apollo at Megara, also of bricks. Hadrian caused it to be rebuilt in marble. The edifice contained statues of ebony wood of the old type, two of which especially resembled Egyptian statues, and a work of Eeina.[3]

Note 1.p.70. Histoire de l'Art. Vol. VI.p.654-658. It has recently been attempted to be shown that the edifice of Ocha had never been a temple, that it was the guard house of watchmen posted on the summit, that commands one of the passes most used from the Aegean sea. Th. Wiegand. Der angebliche Temple auf der Ocha. (Athen. Mitt. 1896.p.11-17; pls. 2, 3).

Note 2.p.70. Pausanias. X. 4,3.

Note 3.p.70. The same. I. 42-5.

Perhaps one owes to the most recent excavations of Troy the discovery of an authentic example of the primitive temple. Those excavations have especially the result of separating the edifices of what V. Doerpfeld calls the sixth city, from the fortress with a perimeter much larger than that of the second or burned city, and protected by higher and better constructed walls. That fortress was contemporaneous with the ramparts, palaces and tombs of Mycenae and of Tiryns; this is affirmed by the vases, whose fragments are found mixed with the ruins of the buildings of that city, the real Troy of Homer, whose power and fall served as a theme of the epic singers. There near the exterior of the enclosure were brought to light the remains of several great halls, whose plans recall that of the principal room of the palace of Mycenae, the megaron.[1] In one of those buildings W. Doerpfeld is inclined to recognize a temple. That is preceded by a prodromos or vestibule only 3.3 ft. deep, and is a spacious room 50.2 ft. long by 27.2 ft. wide.(Fig. 10).

There was discovered still in place only the base of a column found at Troy from the first of the sixth layer. It is a flat slab of irregular form, on the upper face of which and cut in the same block projects a cylinder 1.87 ft. diameter and 0.92 ft. high. (Fig. 11). A wooden shaft was set on this cylinder. The part of the stone covered by the wood has remained smooth. On the contrary near the border, where the cutting was exposed to the air, the texture of the limestone is rough and as if worn. If from the entire diameter of the section of the cylinder be taken twice the width of that ring, one obtains the approximate diamete of the post; it was not less than 1.25 ft. Such a slender post could not alone support the weight of the ceiling; there is reason to assume three columns placed on the same axis in the direction of the length of the room.

Note A.p.70. Doerpfeld. Troja. Bericht etc. with 2 plans and 89 illustrations. 1894.

Note 1. p. 71. This is the building described by Doerpfeld under the title of "Gebaude VI c(p. 22-25).

Doubtless in uncovering the edifice, nothing was found to reveal its purpose; like the other similar buildings, this might be the room of one of the chie persons of the city. Yet here are the reasons permitting one to suspect here the existence of a temple. This building is very near the place where was built under the sucessors of Alexander the Great the temple of Athena Ilios' the court extending before it was almost in the middle of the area of the castle, i.e., in the vicinity of the highest point of the hill, where according to the statements of the Iliad itself were built the sanctuaries and altars of the gods. That court enclosed by well built walls of masonry has the appearance of a temenos, of a sacred precinct. Of all buildings of the same kind, this is the only one having a vestibule with such slight depth. Everywhere else the vestibule is sufficiently wide for nearly as many to assemble as in the megaron, here on the con rary, this part of the edifice seems to have only a purely ornamental purpose, a peculiarity that accords with the hypothesis mentioned. What is important in the temple is the closed room supposed to be the habitation of the god. Now this chamber offers a trait found in no other of the buildings at Troy; here alone the hall is divided in two aisles by a row of columns. On the other hand, this very rare arrangement is exactly

that which characterizes one of the most ancient Grecian temples known to us, that of Neandria, an Aeolian city quite near Troy, where in recent times have been made singular discoveries.[1] One is tempted to think, that this is not a mere coincidence; to ask if he is not here in presence of a type of religious edifice, that dates from the primitive period, and which in that country would be perpetuated till in the full historic age.

Note 1.p.72. Koldewey. Neandria., Berlin . 1891.

Why one might have the idea of opposing this conjecture is t the fact, that the building in which it is proposed to seek a temple does not present the orientation, that we believe should be attributed to all antique temples; its facade is turned toward the northwest; but it is known that even later this rule was sometimes neglected. Here further is what proves that it did not have a general application until quite late; also to the northwest faces the temple of Neandria.

In the entire external face of the rampart of the sixth city, the condition of the stone indicates, that it remained long exposed to the air. When the crest of the work was overthrown, the inhabitants did not trace a new line of defense before or behind the old rampart; they contented themselves by filling the breaches by superposing another wall, thinner and less careful in execution.[2] The people established on that hill seem to have been reduced then, and to have led for several centuries an obscure and mediocre life. It sheltered itself behind the earlier enclosure until the time about the end of the 4 th century, when was built of entirely different masonry that, whose construction has been attributed to Lysimachus. It was the same for the worship. The building described by us perhaps remained in that form during many centuries, the principal temple of the local deity. It would have been frequented at the same time as that temple of Neandria to which we have compared it. In the latter the art is much more advanced; but still between the edifices one believes to be found in the resemblance of the plans an original relationship, that gives this conjecture great probability.

Note 2.p.72. Dorpfeld. Bericht. p. 44.

We have been compelled to go back to Troy, even to a Troy contemporaneous with the Mycenae of the Pelopides, to find a

monument that appears to have some right to represent an entire vanished species, that of the temples concerning which Pausanias makes no mention of an order, rustic edifices, very different in arrangement and appearance, that had nothing in common but their religious purpose. Nowhere, neither in Asian Greece, in the islands, nor in European Greece, have been found ruins in which with certainty can be sought the temple, or at least the substructure of the temple contemporaneous with the epic period. Thus one has sometimes thought to recognize the work of Agamedes and of Trophonios in the strong walls, still intact and completely uncovered since the latest excavations, which at Delphi support at the south the terrace on which was placed the celebrated edifice containing the oracle of Apollo. We hold that conjecture as improbable. If the temple properly so called had only a slight importance from the time of Homer, is it probable that to support the sanctuary alluded to in the Iliad and the Hymn to Apollo Pythios, was constructed a platform with one side 292 ft. long? Besides the polygonal masonry, where in that wall it presents a close adherence to polymorphic blocks, does not have a primitive character; it rather belongs to the 6 th century than to the 10 th or 9 th. The wall in question must date from the reconstruction by the Alcmeonides.

The religious architecture does not seem to have made sensible progress in the course of that period. It remains for us to seek what civil architecture became after the Dorian invasion, whether it continued to enclose by powerful ramparts the sides of the acropolises, and to erect on their summits those great and richly decorated edifices, in which we have recognized the hereditary dwellings of the Achaian princes.

5. Civil Architecture.

The ancients never attributed to the heros of the Iliad and of the Odyssey the construction of the enclosures of Tiryns and of Mycenae, of those walls that are astonishing by the size of their materials; they gave the honor of them to the legendary workmen, the Cyclops, whom they placed almost outside the bounds of humanity. In that approximate chronology, that served them for grouping their myths, they had placed this intervention of the Cyclops at about the very beginnings of the Argive civilization, at the time of that Proetos who preceded Perseus and

Hercules. This meant that they had not possessed any exact memory of the age, when those great works were executed, that were regarded as much earlier than those dynasties of the Pelopides, who by the part that they played in the epic period, already b belonged in a certain measure to history. The epic poets then longer knew on that subject only what the tradition gave, that a little later was accepted by the tragic poets of Athens and by Pausanias.

Men asked why it occurred in Homer, who so frequently contrasts the vigor of the men of antiquity with the weakness of the men of his own time, that there is not the least allusion to the weight of those enormous blocks, that seem to have been raised in sport by the primitive constructors. This silence is explained by the real native land of the two poems. This is th that from European Greece, Crete and Egina, the Peloponnessus and Thessaly, the epic poets at the migration of the Ionians and Aeolians brought as a first sketch their tales of war and adventure; but it was in Asia Minor and in the adjacent islands where this poetry completed its evolution. Now at Smyrna, at C Chios and Samos, one was very far from Argolis; one was not even very near the ruins of Troy, that had been besieged by the valiant Achaians. If in Greece beyond the sea the names o the heros had not been forgotten, sons of Minos and Eachos, of Peleus and of Atreus, if there had been retained for each of them the traits first lent to them by the imagination of the singers, if even by the persistence of vases that retained the memory of the descriptive epithets that he placed in his work, he appeared to have retained a quite exact memory of powerful and wealthy cities like Orchomenos and Mycenae, if not ignorant that Troy owed its prolonged resistance to the solidity of its walls, those poets however did not live in the vicinity of fortresses, that had been erected to ensure to their masters the control of the rich countries of Beotia, of Argolis and of the Troad. They had not had occasion to experience before those walls the expression of surprise, whose trace would be found somewhere in their works, had they entered the galleries in the walls of Tiryns, and if they had passed through the gate of lions at Mycenae. The epic poets that supplied to Homer the materials of the Iliad do not even seem to have seen the wall of Troy c contemporaneous with Mycenae, that wall just uncovered by M.

Dörpfeld (Fig. 12).[1] Had they measured its height with the eye, it seems that they would have spoken in a manner less vague; they would have emphasized more the strength of that barrier, the obstacle that it opposed to the undertakings of t the Greek heros, that like Patroclus and Achilles came to strike it wit their spears i vain. Did not two immortals, Poseidon and Phoebus, in one year of labor build it for Laomedes, father of Priam? [2] It would have been natural, that to justify that tradition, the poet would be pleased to describe that rampart as he has described the shield of Achilles, the work of another god. Homer has done nothing, and the wall of Troy, that wall around which occurred the entire drama of a ten years' war, is fon him any wall, that he does not clearly represent to himself. If he thus remains vague, it is because the cities inhabited by him are not enclosed by walls; because he has never found himself opposite a rampart either built of cleft rocks, like that of Tiryns, or like that of Mycenae, of stones already well cut.

Note 1.p.75. Bericht. p. 38-56.

Note 2.p.75. Iliod. VII. 452-453; XXI. 443-447.

On the contrary, details abound where is concerned the fortified line constructed before their tents. The poet sees these country works similar to presented to his eyes more than once. The camp is surrounded by a ditch whose inner bank is equipped with palisades. Behind these rise the rampart. As foundations, trunks of trees and great slabs of rough stone; what Homer calls "steles".[1] Those slabs support the earth that forms the body of the rampart, and above it was held in place by ties of timbers. When Sarpedon tears out a part of those ties, the e earth slides; a breach opens in the wall.[2] At places near the gates are towers that seem entirely made of timbers.[3] This mode of construction, with the part played by wood, is nearly that found at Troy in the burned city, and also in Argolis; but here in the improvised work, bricks dried in the sun are replaced by tamped earth.

Note 1.p.76. Iliod. XII. 29, 259.

Note 2.p.76. The some. XII. 397-399.

Note 3.p.76. The some. XII. 36.

Here is what proves that the epic poets knew no other type wall from their own experience; in that ideal isle of Scheria

inhabited by the Pheacians, who are represented as men superior to the rest of humanity, if the poet of the Odyssey places a wall, this wall is only a barrier of wood. When Ulysses enters the city where Alkinoos reigns, he admires"the steps of the l long and high walls, where the palisades are well joined, marvellous to see".[4]

Note 4.p.78. Odyssey. VII. 44-46. One can merely see a poetic hyperbole in the mention of a wall of bronze surrounding t the entire island of Eolus.(Odyssey. X. 3). The poet seems to have represented to himself a wall of smooth stone, covered by plates of bronze, something like the walls of the chamber of the Treasury of Atreus. It is not possible for the walls of an enclosure to have been so covered. But to strike the minds of his hearers, the poe imagines the application to an entire wall of an arrangement, that in practice could be employed only for interiors or for richly decorated facades of monuments.

By what one divines of the history of the tribes to which we owe the epic period, is explained how was lost by them the habit of employing stone quarried in great blocks for the construction of indestructible ramparts. When the Aeolians and Ionians landed on the shores of Asia Minor, what was necessary to ensure them during a brief stay was an entrenchment, that pro ected them against the attacks of the natives. This result was obtained by digging a ditch; throwing inside the earth removed to form the rampart; by setting on the top of the bank a row of piles close together, they sheltered themselves. When the people at first hostile had been driven to a distance, or they were attached to them by the ties of commerce, they did not feel any need of strengthening their defenses. From Mysians, Phrygians and Carians was nothing more to be feared, and on the other hand, it does not seem that there were between the Greek cities of Asia Minor bitter and persistent enmities, like those of European Greece, causing wars between Argos and Phliante, Thebes and Orchomenos, or Thebes and Platea. Cast on the frontier and as if on the border of the barbaric world, those cities had too many common interests to be tempted to fight and to ruin each other. They were generally sufficiently distant from each other, tha each one had a suburb sufficing it; high mountains or wide gulfs separate the dominions of Smyrna and Phocea, of Ephesus and Miletus. Besides it was not on the side next the

main land that each of those groups sought to extend itself; its true outlets were on the side next the sea. Seeing themselves menaced neithe by their neighbors in the inteeior nor by their sisters of the same race, those cities appear to have only commenced very late to surround themselves by stone walls, they did not consider the day when they would have to d defend themselves against the Lydians, they against the Persians. Miletus was fortified when the Lydians attacked it; but Herodotus does not state the sort of rampart, that compelled Alyattes and CRoesus to content themselves with devastating the fields and orchards of the Miletans.[1] The historians are more explicit for Phocea. When the Phoceans, after the fall of Sardis, had reason to fear the Persians,"they constructed around their city with great stones well joined," a wall that had several furlongs in length.[2] Phocea previously had only a wall of crude bricks, if it even possessed any enclosure. The author of the Odyssey seems to have represented to himself Ithaca, Pylos and Sparta as open cities; when he introduces Telemachus or Ulysses into them, there is no allusion to the gates that the visitor had to pass.

Note 1.p.77. Herodotus. I. 17.

Note 2.p.77. The same. I. 163.

Still there is more than one mention of fortified cities in the epic period. The city represented by Hephaestos on the shield of Achilles is enclosed by a wall, on the top of which ar women, children and old men.[3] More than one city receives the epithet of walled, or rather the poet recalls that it is furnished with towers. The cities to which this character is thus attributed are, besides Troy and Scheria, Gortyne, Tiryns, Thebes of Boetia and Thebes of Cilicia, Lyrnessos, Calydon, the city of Curetes, Pleuron, Pheia in Elis.[1] The sole one of these cities in which may be preserved a wall certainly preceding H Homer is Tiryns, and one cannot doubt that the epithet refers to the Cyclopean masonry still existing today; but one cannot conclude that all the other cities so qualified had a wall as strong as that of Tiryns or built in the same fashion. Yet several of the cities to which attention is directed thus dated back in the primitive period; that is the case for Thebes and Gortyne. The Thebes of Cadmus and the Gortyne as a rival of Cnossos might have had Cyclopean walls that disappeared later.

For all as for Tiryns these are recalled by the epithet mentioned. Homer found it joined to the names of these cities in the old songs that he utilized; but he attached no precise sense to it; for the poet a rampart of earth and of wood, like that erected by the Greeks before thei camp, is the supreme effort of the art; did he not attribute to Poseidon the fear that such an important work should cause to be forgotten the wall that Apollo and he wit their divine hands erected entirely around Troy? To reassure his son, Zeus engages him to throw against that barrier, as soon as the Greeks have departed, the waves commanded by him. Those would soon efface all trace of the work of man, and where arose that obtrusive monument, should henceforth be seen only a sandy strand.[2]

Note 3.p.77. Homer. Iliad. XVIII. 514. See Iliad. XV, 737, and IV, 308.

Note 1.p.78. Helbig. L'epopee homerique. p. 119-120.

Note 2.p.78. Iliad. VII. 446-463.

Then it seems, that for what concerns the art of fortification, the architect in the time of Homer was less skilful and bold than during the Mycenaean period; he dared or knew not how to derive the same benefit from stone. From the idea that several reasons are given for the rude and warlike tribes, that established themselves in the most fertile parts of the Peloponessus, one is inclined to believe, that this domain of the new masters of Argolis and of Laconia also, was more rus ic than that of the Achaian princes. At Sparta, that city which was a type of the Dorian state, the kings never seem to have had a palace; when they were not at war, they lived in their farmhouses on their lands as great rural proprietors. One feels afar the wealth of the palaces of Mycenae and of Tiryns, with the old Dorian law attributed to Lycurgus, according to which the doors of houses should only be dressed with the saw, and the roofs only with the axe.[1]

Note 1.p.79. Plutarch. Lycurgus. 13.

If for a long time, customs must remain very simple in European Greece, it was otherwise in the groups that the result of the invasion had driven into Asia Minor. Those emigrants had carried with them entrusted to the memory of poets the ancient traditions of their race, the memories of an age of adventure, power and glory; they had also brought with them the taste for

a certain luxary, certain habits of elegant and noble life. In the groups of exiles were artisans, trained in the practice of certain trades. The new cities were soon enriched by the cult-ore of fertile lands and especially by commerce, and saw again the flourishing of the arts cultivated by Mycenaean Greece. Th Their chiefs, descendants of the old families beyond the sea, did not fail to apply themselves to enhance the dignity of t their rank by the splendor of the surroundings in which they sought to place themselves. For them labored in the city the most skilful workmen, and for them also the Phoenician merch-ants drew from the holds of their ships fabrics with fine em-broideries, arms skilfully inlaid with gold and silver, the most beautiful jewels, and vases of metal most sumptuously ornamented; all that served to decorate the person or house of the prince. This was frequented by the epic poets, by those singers, that like Demodocos and Phemios of the Odyssey, cele-brated in the festal hall the exploits of the ancestors. To receive the guests gathered there, it was necessary for the r royal dwelling to have a very spacious room in which should find place on great occasions for all the nobles of the city. That dwelling must then retain certain traits that had charac-terized it in the preceding period. Hence we shall have no dif-ficulty in showing as derived from the epic period all that it contained of that kind, by positive statements and indications more or less clear.

From the Iliad is not much to be derived. It is a tale of war. The Greeks are in the country. They live under shelters made of branches and reeds. As for Troy, it is seen in a a way only f from the outside; the poet especially shows the Trojans on the field of battle or grouped on the enclosing wall; there is scar-cely occasion to follow them into the interior of the city. Yet it indicates in a rapid sketch the character "of the palace of Paris built for himself with the aid of the best carpenters then in Troy; this had bedrooms, a reception hall and a court, near Priam and Hector on the summit of the city".[1] One will note our translation of verse 316; (Greek text.

Note 1.p.80. Iliad. VI. 313-317.

If we have rendered by paraphases the two terms "thalamos" and "doma", this is for better understanding the same. Homer briefly recalls the three great divisions of the palace of My-

Mycenae, that are also those of the palace of his time. "Doma" is here synonomous with "megaron", that large room in which visitors assembled is the most important part of the house, that most attracts the eyes; hence the poet designates it as the house itself, the house in particular. The "thalamos" is the private portion of the dwelling; in a princely residence this quarter could contain but one chamber; for that reason we have employed the plural here. Finally the court or "aule" is a necessary dependance of the house; it is what we have seen in the plan of Tiryns.

Although described at greater length than that of Paris, the palace of Priam is done with less precision.[2] The poet speaks of the court or "aule", as well as of the "porticos with plain surfaces", that enclosed it; but on what he particularly insists is the extent of the private apartments, the very exceptional number of members of the family that had their reserved places. "There were in the house fifty chambers of polished s stone, built near each other; there the sons of Priam slept with their wives." Priam, that Asian patriarch, had almost as many children as Ramses Meiamoun; his entire family did not stay in those fifty chambers. There was another series of entirely similar rooms, that were intended for his daughters and their husbands; but these last rooms were on the opposite side, i.e., before the megaron in the outer court. They are placed in sixes on two sides of the court.

Note 2.p.80. Iliad. VI. 242-250.

Not a word of the megaron itself; we know nothing of the mass of the structure, that connected the outer court with its lodgings to the reserved quarter, the rear portion of the palace. There is an omission or rather an understanding, that is suited by only one explanation. None of the important scenes of t the poem has the royal residence for its location; Homer thus had no interest in making known the entirety of the arrangements by which the edifice was defined; but he conducts Hector there, who comes to charge his mother to assuage the anger of Pallas, and to seize that occasion for indicating by some chosen traits the grandeur and magnificence of that dwelling. What appeared to him most suitable to strike the minds of his hearers is the enumeration of those chambers in unusual number' also the care with which was executed the work of construction

and that of the dressing of the s one. No more was necessary: it is for the imagination to represent to itself the rest in keeping therewith, with the same appearance of size and wealth.

Quite different is the case of the Odyssey. In the dwelling of Ulysses is exhibited the prologue of the drama, and the ending occurs after varied accidents, that lead the poet to parade his personages in that entire house, from the court that precedes it to the most retired rooms, from the ground story to the upper story. He nowhere interrupts himself to describe the palace; but the circumstances themselves od this story lead him to make allusions to the principal arrangements of this building, sufficiently numerous that it has been thought possible to restore at least the plan. These attempts have led to very diverse results; but however marked the diversities, there is nothing that must discourage curiosity. Recent excavations have placed the archaeologist before more than one edifice offering singular relations to that Homer had in view; thus they have permitted a better definition of the terms of the epic language. This furnishes us with the means of presenting a plan on which it is easy to follow in all their proceedings, the actors in the final scenes of the poem. (Plate I).[1] A perspective view of the edifice makes these arrangements still clearer.(Plate II).[1]

Note 1.p.81. The best plan of the palace of Ulysses ever given appears to us to be that given by Jebb in his interesting study entitled; The Homeric house in relation to the remains of Tiryns (Journal of Hellenic studies. 1888. p. 170-188). Yet the sketch that we present differs in several respects from that traced by our predecessor. In Note 9 on page 170 will be found in Jebb the list of the principal works, that have been devoted to the house of Ulysses. Helbig occupies himself only with the decoration and furniture of the house; he does not seek to restore its plan. All the texts relating to the Homeric house are methodically grouped in the Memoir of Dr. Joseph, architect:- Die Palaste des Homerischen Epos, mit Rucksicht auf die Ausgrabungen Heinrich Schliemanns. 2 nd edition. pp. 1-107. 2 pls. We have not always reached the same conclusions as that author; but he appears to have often seen correctly. One will also read with profit the observations of Puchstein on the Homeric house. (Archaeol. Anzeig.1891. p. 42, 43, in Vol. VI of

Jahrbuch); he states that the poet does not seem to have had in view always the same type of house, and that he has attempted to distinguish and define those different types.

Note 1.p.82. The kind of perspective chosen permits showing in their exact proportions the various parts of the habitation; but the use of this mode imposed by circumstances risks causing the buildings to appear larger than the reality; we must guard against that illusion. This residence occupies only a limited area of ground; in its greatest dimension the court is only 105 ft. between the porticos. The view indicates the different kinds of masonry employed in these structures, masonry in horizontal courses with projections, polygonal masonry of small cut stones, masonry of small rubble, walls of crude bricks and wood, facings of polished stone and of wood, etc.; Those buildings could not have all been built at the same time. At their upper part the walls do not stop horizontally at the same height; they have been leveled at different heights, according to whether it was desired to show the interiors of the halls or the su surfaces of the courts and terraces. The upper part of the enclosing walls is even sectioned by removal.

With its double propyleons and its high facade preceded by a double court, the palace of Tiryns must have offered to the v visitor an imposing appearance, that did not lack a certain elegance. At Ithaca, what is striking at first sight in the house of the prince, when viewed from outside, is less its appearance of wealth and luxury, than its solidity and power of resistance. This results from the verses in which Ulysses, when he approaches his own dwelling in his role of a mendicant stranger, expresses the impression made on the mind of the spectator.

Eumeus, there is certainly the beautiful house of Ulysses!
It is recognized afar among all others.
Buildings succeed buildings; its court is surrounded
By a wall with its cornice, and there are solid doors
With double leaves; no man could force his way in.[2]

Note 2.p.82. Odyssey. XVII. 264-268.

This door with solid leaves we have placed in an angle, as Tiryns, but we start from the idea, which will be confirmed by the entire study, that the Homeric palace was smaller and simpler in arrangement than the Mycenaean palace; we then have not believed it necessary to restore here those propyleons with co-

columns found at Mycenae and Tiryns. The doorway (Plate I,A) however retains the arrangement already mentioned at Troy,and that characterizes the propyleons; it does not open directly to the exterior in the plane of the external face of the wall; it is placed at the back of a vestibule and precedes another, an arrangement that has something monumental and that facilitates oversight. A bench is placed against one of the walls of the outer vestibule.

In Homer, the word court is never used in the plural;[1] it is the outer court, the principal court is the only one in which the poet has occasion to conduct and exhibit his hero. At Ithaca is mentioned only a single court, on which opens the megaron; it must be entirely surrounded by a hood or portico, under which men sheltered themselves from sun or rain (WW). At the entrance of that court Ulysses saw lying on a heap of filth his old dog Argos, who died from shock, when he recognized his master after the lapse of twenty years. There was a dunghill in a corner of the court, and it was the same before the palace of Priam.[2] In the vicinity of the megaron, a part of the area had received special preparation; the earth was tamped, or even perhaps small pebbles were driven into concrete, as at Tiryns, and formed a sort of pavement there. The suitors played at quoits before the megaron on that artificial ground.(X).[2]

Note 1.p.83. Odyssey. XVII. 290-300. Iliad. XXIV. 164, 639-640.

Note 2.p.83. Odyssey. IV. 627.

From that court in the dwelling of Ulysses as in that of Priam, light was taken by certain rooms in which lodged the guards, servants and guests (F). At Troy the sons-in-law of the king thus dwelt in front and outside the house proper; there Telemachus himself had his chamber on the court. It would have appeared inconvenient for an unmarried may to live and sleep in the quarter reserved for the women, among the servants of the queen. The poet indicates that the chamber of Telemachus was "high and well in view."[3] That decided us to place a story on the buildings on two sides of the court. The stairs E lead to that chamber, which is shown in the perspective. Under it and on each side could be found rooms, such as for wood, winepress and oil mill. We do not assume high chambers on the side of that court into which opens the doorway; there must be found

the stables and stalls (B), as well as a sort of park in which were placed the animals brought for consumption by the family (C). As for the "beautiful enclosures", where Eumenes placed t the swine that he brought for the visitors, while awaiting the time of slaughter, we place them beside the house (h);[1] there in that enclosure is ground with a little grass and some trees; it communicates with the court by a passage placed at the back on the left. A larger enclosure (m) extends behind the house; if one finds that it merits better the Homeric epithet, it suffices to assume an open door in the wall, that forms the back of the lateral enclosure.

Note 3.p.83. Odyssey. I, 425-426.

Note 4.p.84. The same. XX. 164.

There was also somewhere in the external dependances of the palace a structure mentioned only in the story of the punishment, that Telemachus inflicted on the servant women, that yielded t themselves to the suitors. Ulysses ordered Telemachus to slay them "between the tholos and the strong wall of the court".[2] One may inquire if the tholos were not outside the court, if it is not necessary to seek between the tholos and the outer face of the wall the place designated for the execution; but would it not be improbable that one of the structures forming part of that entirety should thus be isolated in the country? Further, the sequence of the story seems to imply that the place marked for the massacre was quite near the entrance of the megaron. Telemachus and Eumenes caused those unfortunates to wash t e floor, tables and seats of the great hall in which the suitors had been killed; then "having made the servant women to leave the megaron, he gathered them into the narrow space between the tholos and the strong wall of the court, from which it was impossible to escape".[3] It is not stated that the murderers drove those women out of the court; as soon as driven from the apartment in which they performed their last work, they were collected in the place itself, where they were to die. According to Telemachus, it would do them too much honor to strike them with the sword; he preferred to hang them, and to prepare the gallows, he takes a rope of a ship "and coils one end around the tholos, while he attaches the other to a great column".[4]

Note 2.p.84. Odyssey. XII. 441-442.

Note 3.p.84. Odyssey. XII. 458-460.

Note 4.p.84. The same. XII. 465-466.

What was the tholos and where must its place be sought? In the language of classical architecture the tholos designates an edifice of circular form, like that which Polycletos had constructed at Epidauros. What shows well that the poet has well in view a building of that kind is the expression, that he employed in describing the operation executed by Telemachus. He attaches the rope to the column; but coils it around the t tholos. The tholos is then a circular building, and that structure could have but a small diameter; otherwise it would be n necessary for Telemachus to have a rope of unusual length. That building must be elevated on a substructure to which one ascended by several steps (H); if the foot of the rotunda had rested on the ground itself of the court, and Telemachus had stretched the rope at the height of his raised arms, the bodies of those suspended would have touched the earth. To proceed to the coiling by means of a ladder would have been long and difficult. On the contrary, add a base that supports the rotunda; the hero stands on the level of the top of that solid, and with a turn of the hand ties the rope at the desired height. To fasten the other end on the shaft of the column would suffice a stool or even a stone found there. We assume a distance of about 16.4 ft. between the column and the tholos. If longer, the rope would not have had sufficient stiffness, and the twelve condemned could take that space.

What was the tholos? Various hypotheses have been profosed. Some have thought of a privy.[1] The conjecture is ingenious; it accords well with the intentions of Ulysses, who desired the servant women to perish"by a shameful death"; but it is permissible to ask if the Homeric habitation actually contained a room for that purpose. It would still be possible to see there a circular structure like that frequently found in our country places, erected as a protection from dust over the orifice of a well or cistern. Or indeed might it not be a rotunda open to the air below the shelter of a mushroom roof, a sort of kiosk, where one came to sit to enjoy the coolness of the evening? I have frequently seen kiosks so placed before the konaks of Turkish beys; they pass long hours there in drinking coffee and taking their kief.[2] We have placed this tholos in a little side

court communicating with the great court; (Plate I, G); from the elevated base on which rests the rotunda it would have been easy to see the country over the wall. In the angle of that court is found a sor of shed; on the side next the court is seen a column, that must support the edge of the roof. If the purpose of the edifice always remains conjectural, the arrangement that we present is plausible; it corresponds to the episode in which is mentioned the tholos.

Note 1.p.85. Joseph. Die Paläste. p. 28.

Note 2.p.85. G. Perrot. Souvenirs d'un voyage en Asie Mineure. p. 141-143.

Besides the tholos, there was also in the court an altar of Zeus Herkeios or "protector of the enclosure". When all the suitors had fallen under the blows of Ulysses, the singer Phemios, who had chanced to escape the massacre, asked if he should embrace the knees of the conqueror, or if "leaving the megaron, he should go and seat himself against the altar of the great Zeus Herkios, where Laertes and Ulysses had burned in honor of the god the thighs of so many oxen".[1] It seems probable that t this altar was situated at about the middle of the court (Plate I, D). That is the position occupied at Tiryns. If it had been placed in the immediate vicinity of the principal building, t the smoke of the holocausts would have entered the vestibules and have penetrated into the megaron. Since the fire of the s sacrifice was kindled there, that altar was a sort of sink as at Tiryns and at Mycenae; it could only be a solid mass made of crude bricks or rather of stone. What the Greeks in the time of Homer understood by the "bomos" is comprehended, when one sees the poet apply this word to the pliths in the house of Alkinoos, that supported statues of young men in whose hands gleamed the torches.[2]

Note 1.p.86. Odyssey. XXII. 334-336.

Note 2.p.86. The same. VII. 100-101.

We have given to the house of Ulysses in its front and public portion an arrangement less complex than that characterizing the palace of the preceding age; we have placed there only a single vestibule open in front, like that giving access to the Greek temple, while at Mycenae and at Tiryns there was further behind that portico a closed antechamber, here having one of those three doors.[3] Nothing seems to us to justify the hypoth-

hypothesis of doubling the vestibule, of a closed room interposed between the megaron and the outer porch. This porch is what Homer calls the "prothyron", "what is before the door". (Γ). There is frequent mention in the two poems of the "aithousa"(implied "stoa"), verbally the "heater". We recognize this aithousa in the portico, wider than those of the two small sides of the court, that is attached to the main building, whose middle is occupied by the megaron (MM).[4] The term "prodomos","what is before the house", has a less precise sense; it is sometimes used as a synonym of prothyron, and sometimes it seems to apply to both the aithusa and the prothyron, to the whole of that front of the principal structure.[1] the Epithet that usually c characterizes the aithousa is "eridoupos" or sonorous; the noises of the court come to echo from the walls of the portico and against the under surface of its roof. In summer nights under that gallery men liked best to sleep, stretched on a mat or the skin of an animal.

Note 3.p.82. Histoire de l'Art. Vol. VI. Figs. 82, 116.

Note 4.p.86. The tale of the combat of Ulysses and Iros is thus explained very well. The fight occurred in the middle of the megaron; then after Ulysses has knocked down his adversary at the first blow, he dragged him outside; he passes through t the prothyron, the door that communicates with the aithousa, and goes to seat the vanquished against the wall of the court. (Odyssey. XVIII. 32-33). If in the phrase the court be mentioned before the aithusa and its doors, the measure of the verse caused this transposition; the mind of the hearer had no difficulty in reestablishing the real order and following the progress of Ulysses. From the vestibule he turns to right or left, doubtless toward the corner, and pushes Iros against the wall of the court. If one desired to see here in the aithousa a second vestibule placed before the prothyron, it must be supposed, that to relieve himself of Iros, Ulysses had to pass over the entire width of the court; with the interpretation proposed by us, he only has to take some steps after leaving the great hall. The connection of the two terms presents no difficulty whatever in a passage of the Iliad, where Phoenix relates why he was led to exile himself. (IX. 172-173). He is lying in the internal apartments, in the thalamos. One wishes to prevent his flight; so that he may not escape in the darkness, two fires are li-

one beneath the portico adjoining the vestibule, the other in the vestibule itself.

Note 1.p.87. Several passages of the Odyssey evidence this extended and collective sense generally of the word prodomos. (IV. 297, 302; III, 397, 399; XX, 1).

A single doorway opened from the prothyron (L) to the megaron (V). In the opening of that doorway, Ulysses came to seat himself humbly, when he presented himself to the suitors in the costume and appearance of a beggar;[2] that is guarded by Ulysses and his three companions during the entire duration of the combat.[3] That door has a threshold made of a block of ash and jambs of cypress wood, "that a carpenter has polished skilfully and dressed by rule".[4] By these details one feels the importance that the constructor attaches to this part of his work; he desires to first give to the visitors a high idea of the luxury of the royal habitation. The threshold of that opening, that sill of smooth ash, is the special threshold, passed by all visitors coming from outside; it is the great threshold (O).[5]

Note 2.p.87. Odyssey. XVII. 33.

Note 3.p.87. Odyssey. XXII. 75, 250.

Note 4.p.87. The same. XVII. 339-340.

Note 5.p.87. The same. XXII. 2. Jebb has demonstrated, that the great threshold over which Ulysses bounded at the beginning of canti XXII, could only be the threshold of the entrance doorway near the prothyron; we do not give that demonstration after him. (Journal. Vol. VII. p. 177-179). The entire sequence of the tale would be unintelligible, if one admits that Ulysses, after having bent his bow and sent his arrow to the mark from the back of the hall, crosses this hall as if to retreat. It is true that Homer says nothing of that step; but it is implied by the words that he places in the mouth of Ulysses speaking to Telemachus after accomplishing his exploit. (XXI. 424-430). It can be summarized thus:-- "I have arranged, Telmachus, for you not to blush for the guest to which you wished a good reception to be given; but the moment has come to leave these lords to their pleasures". He speaks these words in passing from the top to the bottom of the hall, as if to take leave; thus without arousing suspicion, he approaches the entrance of the megaron, and only after reaching his post of combat does he unmask and

lay the arrows at his feet. For hearers that knew the arrangement of the contemporary house, and to whom the theme of these tales was already familiar, there was no obscurity.

We have come to the megaron (V). One knows the vast dimensions of the hall for which has been recognized that appellation in the palaces of Tiryns and of Mycenae. It is unnecessary to seek dimensions in Homer; but it results from his tales, that the megaron of Alkinoos and that of Ulysses are equally very spacious rooms. At Scheria, Alkinoos gathers in his palace to hear the story of the adventures of Ulysses all that he calls leaders and chiefs of the Pheacians. "The court and porticos and house were filled by the assembled men; there were many young and many old men".[1] At Ithaca all the suitors found places in the megaron of Ulysses, seated at ease around the festal tables; masters and servants, there were more than a hundred persons. As for the appearance of the hall, Homer nowhere defines it, but by more than one trait, one divines it to be very similar, at least in the entirety, to that given by us to the megaron in our restoration of the Mycenaean palace. The character of those interiors is indicated by the poet in a few verses; However rapid it may be, the sketch does not fail to have its color and effect. In the night preceding the supreme struggle, Telemachus and Ulysses cross the megaron to place in safety the arms in the apartments of the women, which the suitors might seize. Then Pallas illumines with sudden light the great room and Telemachus cries:--

Note 1.p.88. Odyssey. VIII. 56-57.

"O my father, a great marvel strikes my eyes!
Everywhere,on the walls of the hall and on the beautiful girders,
On the wooden joists of pine and on the columns raising their heads high,
There is in my eyes the splendor of blazing fire.
There is within here some one of the gods that inhabit the broad sky.[2]

Note 2.p.88. Odyssey. XIX. 36-40.

There is seen as if by lightning all presented by our restoration, the great walls offering a place ready prepared for the shining coatings and polished facings, the strong carpentry of the columns furnishing the necessary points of support.

These columns, whose height strikes the poet, have places kn known to us. By the indications that Nausicaa gives to Ulysses, to tell him where to tell him where to find queen Arete in th e palace, one learns that these supports stand around the hearth.[1] There is no trace of a chimney in the buildings of the primitive age, and men were no farther advanced in the time of Homer. In speaking of the arms suspended on the walls of the megaron of Ulysses, he shows them soild by smoke, since their master was no longer there to clean them.[2] There was no part of the construction arranged to receive the smoke and to lead it outside; it eithe passed through a simple opening made in the roof over the fire, or through the spaces of the beams at the sides forming narrow dormers, and by the doorway, not without depositing a layer of soot during its passage. This is recalled by the epithet "aitnalois", that the poet applies to the ceilings of the palace of Priam, and those of the palace of Ulysses;[3] it means blackened by fire, smoked.

Note 1.p.89. Odyssey. VI. 305-307.

Note 2.p.89. The some. XVI. 287-290.

Note 3.p.89. Iliad. II, 414; Odyssey. XXII. 239.

At the time when the hearth was not placed against the wall, it could only be found in the middle of the hall (P); thus it was most accessible, and the heat was best distributed in the entire interior. I have very frequently seen it arranged in that fashion in Greece and in Turkey. I especially recall on the mountain of Samaria where we passed the night. The houses in which the peasants slept were only very low huts of earth; but there was at the middle of the village a great building containing a single very large room covered by a dome. This was called the "house for guests". (Medhafa). While the women worked in the fields, the chiefs of the families spent long hours there in smoking and talking. We found them gathered in their megaron at the end of the day; they gave us at first as bad a reception as the suitors formerly did to Ulysses. It was necessary for us to speak loud and boldly to lodge our beasts of burden in the corner of the great hall, and to obtain our places at the hearth, wet as we were by a torrent of rain. The-at was formed of great stones ranged in a circle at the centre of the room; some logs were burning there, among the embers of which our supper was soon cooking. It is permissible to believe

that in the palace of Alkinoos and in that of Ulysses, the hearth had a less rustic appearance. That hearth was the centre around which clustered men to hear the poets sing, that in spite of the simplicity of their manners already had certain tastes for luxury; columns surrounded it, against which leaned seats decorated by inlays of ivory or of metal; it was necessarily in harmony with that entirety. Then as at Mycenae and at Tiryns, this must be a circular mass sufficiently raised above the ground, that one could place the fuel without stooping, a and wide enough that the brands should not roll off on the ground. Did they not at Mycenae carry their care so far as to paint in several colors the exterior of that base, so as to o place it in harmony with the rest of the decoration of the hall.[1]

Note 1.p.90. Histoire de l'Art. Vol. VI. p. 554-555. Fig. 24?.

If one merely considers the open and public portion of the habitation, the analogy appears striking between the princely house, that the poet of the Odyssey had in view, and that made known by the excavations of Schliemann. The same court, the same great opening at the back of the wide vestibule; the same amplitude, the same arrangement of the megaron.

From the megaron we pass to the thalamos. This in the house of Ithaca has an upper story. Penelope during the absence of her husband occupied the second, as we have stated; she is several times seen to ascend and descend.[2] We have mentioned the beginnings of stairs at Mycenae, that attest the existence of the upper chambers;[3] we have also indicated here the starting of the stairs (S). Not there is the originality of the Homeric house; this is in the relation established between the two parts of the dwelling. With Ulysses the megaron and thalamos adjoin; passing from one to the other is continual. Numerous facts in the tale evidence that arrangement. Invited to Penelope, Ulysses crosses the megaron.[4] At night while lying in the vestibule, he sees the servant women leave the megaron to join the suitors to whom they have given themselves.[5] Penelope is seated in the ground story behind the rear wall of the megaron and hears what is said in that hall; she has placed her seat against the division wall.[1] In that wall is pierced a doorway opposite the entrance doorway; this is the one having a stone threshold, on which Ulysses places himself to shoot his arrow through the heads of the axes (O). This door is shut by Euryclea before the

battle, so that the suitors could not escape by that exit.[2] As soon as the struggle ends, Olysses directs Telemachus to call Euryclea. He executes the order by shaking the door violently. Euryclea comes to look at the corpses;[3] then she leaves the megaron by the same route to bring in the faithless servants.[4] By that Penelope enters the megaron, when she has something to say to the suitors; the poet represents her as then standing upright near the jamb of the high opening.[5] She does act as did Arete in the palace, where the wife of Alkinoos is surrounded by the respect of all; she does not go to sit near the hearth; she does not mix with those men, whom she regards as enemies; she remains on the threshold as on a sort of neutral ground.

Note 2.p.90. Odyssey. XXI, 5; XXII, 1, 85 etc.

Note 3.p.90. Histoire de l'Art. Vol. VI. p. 351.

Note 4.p.90. Odyssey. XVII. 339, 505, 561-568.

Note 5.p.90. The same. XX. 6.

Note 1.p.91. The same. XX. 387-389.

Note 2.p.91. The same. XXI. 387.

Note 3.p.91. XXII. 399.

Note 4.p.91. The same. XXII. 433.

Note 5.p.91. The same. I, 333; XVIII, 209; XXI, 64.

If this doorway furnished the most rapid and most frequently used communication between the two quarters of the royal habitation, still it was not the only way that served for that use. The megaron yet had another exit; this is what Homer calls "orsothuse". This term is one of those not possessed by the classical language, and which already embarrassed the Alexdrine commentators; yet the poet is anxious to define the scene of the action, and explains himself clearly, so that one cannot hesitate concerning the sense of the word.

"There was an orsothure in the well built wall; near the threshold and placed at one end of the megaron on solid foundations was the passage leading into the corridor; it was closed by well joined planks; Olysses commands the divine swineherd to guard that gate by staying near it; thus there was only a single front of attack.[6]

Note 6.p.91. Odyssey. XXII. 126-130. W. Reichel. L'orsothure dans le megoron homerique. (Archaeol. epigr. Mitt. aus Oesterreich-Ungarn. Vol. 899. 1895. p. 6-12).

The orsothure is a door that opens from the megaron into a corridor, and the threshold adjoining it cannot be the great threshold, that of the door of entrance, which is in the power of Ulysses and his companions, masters of the rear of the hall. This results from the appeal of one suitor to the others, and the reply that it caused.

"Friends", says Agileos, "will no one ascend to the orsothure? He will go to tell the people what occurs here, and immediately there will be outside only a cry; then that man will have shot his arrows for the last time".[1]

Note 1.p.92. Odyssey. XXII. 132-134.

Melanthios replies:- "Agileos, that cannot be done, for it is too near the beautiful doorway of the court, and the outlet of the corridor will be t o diffical to pass; one man, if valiant, could defend it alone against all".[2]

Note 2.p.92. Odyssey. XXII. 136-138.

One further learns from the expression employed by Agileos, that it is necessary to ascend several steps to gain the threshold of the orsothure (J); the floor of the corridor is then at a level higher than that of the great hall.

As for the corridor, it allowed the service of the private apartment without always having to cross the megaron under t the eyes of the guests occupying it. (T.T.T). It was placed against one of the side walls of the g eat hall. One end terminated in the court, since if one of the suitors could reach the corridor by the orsothure, it would have been easy for him to flee and reach the city. At the other end the corridor terminated at the thalamos. Homer did not need to specify it; he showed Eumeus following the steps of Melanthios into the interior of the quarter of the women;[3] now Eumeus could attem that pursuit only by passing through the orsothure, which was open to him. He goes by that route to load Melanthios with bo-ds, and soon returns without any obstacle.

Note 3.p.92. Odyssey. XXII. 177-181.

What remains most difficult to comprehend are the movements of Melanthios. He has declared himself unable to flee by the orsothure, that Ulysses bars; but he has offered to the suitors, until then unarmed before their formidable enemy, to seek in the armory of Ulysses the helmets, shields and spears, that the latter had taken care on the previous evening to remove

the festal hall and to place in a safe location. To attain his ends, Melanthios ascends and then without difficulty reaches t the room in which are collected the arms.[1] The question is to know what must be understood by the "roges megaroio.". The word roges is also one of the words not found in the later authors and is connected with the root from which is derived the Greek verb "regnymi" and the Latin verb "frangere"; to translate it literally it would signify the breaks of the megaron, but what that term really designates is unknown to us.

Note 1.p.93. Odyssey. XXII. 142-143.

Modern Greek in the northwest of Asia Minor appears to have retained the Homeric word roges in the form rouga with the sense of alley. It has then been proposed to see in the roges the corridors that enter the thalamos.[2] The connection is ingenious; but where did Melanthios ascend to gain these passages? By the orsothure is replied; yet the lateral door is in the hands of Ulysses and his men. It is better to return to the explanation of the ancient commentators, who see in roges an equivalent of thyrides, small doors or windows. We have assumed in the megaron of women (R) a corbelled gallery over the threshold of polished stone (Q), a sort of balcony connecting the two lateral parts of the apartment of the women in the second story.[3] This passage is necessary for the service of the upper story, the gyneceum. We have admitted that in the wall at the height of the balcony were made two narrow openings, much higher than wide, that served for seeing from above without being seen, what occurred in the megaron of the men.[4] Those little windows could be closed by a light grille or a curtain. We assume Melanthios seeking to rise to the height of those windows. The agile goat-herd succeeded in placing a foot on the projection of the thick horizontal cross beams that held in place the vertical timbers forming the facing of the wall.[1] Once attaining the level of the balcony, he had only to move to one side to slide on one of those slopes and be landed on the balcony. From that moment he could go and come to the thalamos. Ulysses perceived nothing. The rear door was closed and all the back portion of the room was in darkness.[2]

Note 2.p.93. Jepp. The Homeric House. p. 182-183.

Note 3.p.93. This balcony is indicated in projection on the plan by a dotted line and by the letter d.

Note 4.p.93. Those windows would have been placed over the points a and b. That on the left is seen in the perspective view. (Plate II).

Note 1.p.94. Those cross beams are indicated on Plate II in the angle of the megaron that corresponds to the point a of the plan. Among the timbers that enter into the construction of the walls, yet others may present projections that would facilitate the climbing Melanthios.

Note 2.p.94. One might also suppose that this gallery overhung the megaron of the men; but he would be mistaken, that the women could pass in view of the men, and on the other hand, it would be necessary for Melanthios in reaching that balcony to perform a real feat, called in gymnastics a recovery.

It will perhaps be objected, that Melanthios being loaded by the arms that he brought, could not descend by the same way; but what prevents us from assuming that by the window he reaches spears and shields of the suitors, or throws them down from above? The relator does not draw up evidence; the insignificant details are suppressed and can be supplied by the imagination, to place in a stronger light the incidents that carry on the action.

With their upper story, the buildings situated behind the megaron must form a mass, whose height was nearly that of the great hall to which it forms a segment, but it certainly occupied a much larger area of ground. In that part of the palace were rooms in which the mistress of the house and her servants were engaged in domestic labors.[3] The principal one of those rooms was a sort of salon (S) placed behind the megaron of the men. It looked out on a little inner court (V), also furnished with a portico (X), around which was distributed all the dependences; it was very necessary that the women could sit in the open air to spin and sew. These courts have been found at Tiryns in what is believed to be the quarter of the women.

Note 3.p.94. This is what Homer sometimes calls "to megaron". Odyssey. XIX. 16.

The residence of the chief of the clan, heir and other chiefs, that the war had enriched and as we have stated, who was obliged to keep an open table, could not contain storerooms in which were preserved the valuable objects left by ancestors, and especiatty provisions for consumption. Here is how Homer describes

the more important of those stores:-

"Telemachus descended into the thalamos of his father, a large room with high ceiling, in which were heaped gold and bronze, vestments enclosed in coffers and much oil with good odor. There also stood jars of old and mild wine for drinking, jars filled with a pure liquid with a divine savor; they were there arranged beside each other against the wall in case Ulysses returned home, after having suffered so many misfortunes. The chamber was closed by a door made of well joined planks, by a door with two leaves. Night and day a guardian remained there, a woman, whose prudent mind watched over all that. This was Eurycles.[1]

Note 1.p.95. Odyssey. II. 337-347.

This storeroom did not look out on the outer court; for its care was entrusted not to a man but to a woman, the old nurse of Ulysses, dean of the servant women. Besides, every time that Homer speaks of one of those treasuries, he calls it a thalamos; this suffices to indicate that these storerooms formed a part of the entirety designated by that term itself, when taken in its most extended sense. It seems that there were several of those stores with doors furnished with locks.[2] We distinguish at least two of them, that especially intended for daily provisions, and that in which were placed the arms. The first into which Telemachus descends must be a sort of cellar for better preserving the oil and wine; we have placed it under the room V, beside which are indicated on the plan two stairs, one by which to descend to that cellar, and the other of four steps to reach the chamber V. The perspective view sh[illegible] the ventilators that furnish light and air to the cellar.

Note 2.p.95. Odyssey. XXI. 6-7, [illegible].

The cellar contained with the jars, gold, bronze, and clothes folded in coffers; but it is not probable that arms were placed in a basement, where they would be exposed to rust. It would then not have been this cellar that was the storeroom.

"Where were preserved the treasures of the prince,
The bronze and the gold, and the well forged iron."[3]

Note 3.p.95. Odyssey. XXI. 9-10.

That where Penelope goes to take the bow of Ulysses, and where Telemachus had deposited the shields and swords that We-

the more important of those stores:-

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Note 2.p.95. Odyssey. XXI. 6-7, 45-48.

The cellar contained with the jars, gold, bronze, and clothes folded in coffers; but it is not probable that arms were placed in a basement, where they would be exposed to rust. It would then not have been this cellar that was the storeroom.

"There were preserved the treasures of the prince,
The bronze and the gold, and the well forged iron."[3]

Note 3.p.95. Odyssey. XXI. 9-10.

That where Penelope goes to take the bow of Ulysses, and where Telemachus had deposited the shields and swords that Me-

Melanthios removes. We shall seek that armory either in the room V situated over the cellar, or in the room Z; the latter is best suited by the epithet eschatos, the last or farthest place, by which the poet characterizes the chamber of which Penelope has the key;[1] it is indeed the chamber most distant from the entrance doorway. If Melanthios succeeded in entering it, this was because Telemachus neglected to close its door;[2] he was satisfied to push it.

Note 1.p.96. Odyssey. XXI. 8-9.

Note 2.p.96. The same. XXII. 154-156.

Likewise in that quarter at the very rear of the building m must be sought the nuptial chamber with its bed cut in the trunk of an olive tree with its roots remaining in the earth (Y).[3] That chamber, according to the description given by the poet, can only be in the ground story; in the immediate vicinity of this chamber, we assume two bathrooms (F F) for the use of the master of the house and the women.

Note 3.p.96. Odyssey. XXIII. 190-206.

To all that part of the house, access was only by the door opened at the back of the megaron (Q) and by the corridor (TT); but there must be in front and in connection with the entrance court, rooms as the natural dependances of the megaron. Such on the right are the bathrooms, frequently mentioned in Homer; we have placed three of them near the great hall (JJJ); those bathrooms could not be distant from the gynecium, for always t the servant women bathe the guests and rub them with oil. On the left may be assumed, entirely isolated from the habitation of the women, winter bedrooms for bachelors and transient guests. The bathrooms look on the corridor; the chambers for guests are reached by an irregular vestibule (I) with entrance under the portico.

How were the buildings of this princely residence covered? The poet neither states this for the house of Alkinoos nor for that of Ulysses; but there can be no doubt of the nature of th only roof mentioned by him. When Ulysses was with Circe, one o his companions was overcome by wine, and went to sleep on the roof; he fell from it and broke his neck.[4] That roof was certainly a terrace. Perhaps there were in some parts gable roofs; but those slopes could only have been very slight, whose inclination could never exceed that presented by the roofs of tem-

temple.[1] It further appears probable that at least all the of the large rooms of the princely habitations had terraces as coverings rather than gable roofs.[2]

Note A.p.98. Odyssey. XI. 72-75.

Note 1.p.97. It has been desired to find an allusion to the gabel roof in the passage of the Iliad (XXII. 710-712), where Homer desired to describe the attatude of the two wrestlers, that lean toward each other and have seized each other around the body, compares them to two timbers in carpentry, that he calls the "ameibontes" of the high house. In these ameibontes or opposed timbers, it is thought are recognized the principal rafters of a roof; but the idea could have the same propriety only if referred to a sharp roof, like that of our Gothic churches. Now nothing authorizes us to think that Grecian construction was ever crowned by a roof of that kind, and the comparison can be no longer understood for the very obtuse angle of t the roof of a temple. It is necessary to believe that Homer had in mind there something else than a roof. One could conceive a wooden canopy placed over an opening pierced in the ceiling to allow the passage of the smoke."It is", says the poet,"that to prevent the violence of the wind, the carpenter has fitted those opposing timbers; this last trait suits well the arrangement imagined by us, to prevent a squall from driving back the smoke in puffs into the interior.

Note 2.p.97. Histoire de l'Art. Vol. VI. p. 278-282.

When we described the Mycenaean palace, we frequently made use of Homer to take into account certain arrangements presented by the ruins of buildings, and likewise in the course of that study in which we sought to draw the plan of the house of Ithaca, we have on several occasions demanded information from the results of excavations made on the acropolises of Tiryns and of Mycenae. A comparison is made of the resemblances sufficiently numerous, and they are so striking, that it would be useless to insist more on this point. The type of the princely habitation that the poet had under his eyes, when he composed the Odyssey, was derived from that created by the Achaian princes in their castles in Argolis; both for the entirety and the details, it is a sketch from the same model.

Yet there are differences. The most important is in the plan, whose entire character it modifies.[2] At Tiryns, who is believ d

to be the private apartment is connected with the public part of the house only by complex passages and long turnings; at Ithaca there is continuity of the two quarters of the dwelling: there are direct communications between them, and consequently constant going and coming. Such a change in arrangement can be explained only by a change produced in the customs. Just as to become a vestment, the linen takes the dimensions and form of the body, so the house, that is also a covering and enclosure, adapts itself to the habits of the famil:. These regulate the arrangement of the habitation, in their diversity and according to time and place, these give a certain conformation, a certain appearance to it. If the internal arrangements of the palace of Tiryns have been well understood, that by the separation as established there between the two principal quarters of the residence recalled the Assyrian palace, it had its harem. Among the people that built it, customs were nearly those of the Orient, at least in the upper class, among the nobles and kings; women there lived sheltered from the eyes and the society of o men. The Achaian princes must have been polygamous. Between their time and that of Homer, Grecian society made a great advance; monogamy triumphed. As wife and mother, woman has assumed an important place in the family, a place that she will always retain. The part played by her in the epic period is more important and more honorable than that to which she will be r reduced in the Athens of the 5 th and 4 th centuries. Helen at Troy on the platform of the tower, where are gathered the old men, Helen again at Sparta in her palace, Arete among the Pheacians, Penelope at Ithaca, without embarrasment show themselves even to strangers, come to sit in the midst of men and speak to them. In these acts they are as free from intrigue as a Roman matron or a French woman of today. Being given that position of woman, the architect when laying the foundations of the house could not have the idea of trying to separate the sexes, and of multiplying barriers between them. While not sacrificing the requirements of domestic life to those of social life, he sought to render the relations easy and rapid between those, that were placed in contact by so many common interests and so many occasions of meeting.

Note 3.p.97. These differences have been well emphasized by Percy Gardner; New Chapters in Greek History. p. 145-150.

As in expression of more advanced morality, the Homeric house is then superior to the Mycenaean house; but is it the same in regard to amplitude and richness? The buildings could not occupy such a great extent of ground, where the two quarters of the house adjoined each other, as where must be reserved marked intervals between them. Thus the entirety of the edifices of the Homeric age acquired a more connected appearance, less picturesque and less varied. The palace of Tiryns had two wide courts before the megaron; there were other smaller ones in the quarter of the women between the buildings. Those courts were connected; red and blue bands were traced with the brush on the pavement of small pebbles, and gave it an appearance of a many colored rug.[1] It does not appear that the attempt was carried so far as at Troy or Ithaca; if the great court is partly paved, and an altar is erected, the pile of manure found there made it resemble our farm courts in a certain degree. The interior of the megaron was no better kept. One does not conceive a border of alabaster slabs, as at Mycenae, in that hall were prepared the foods, where the meat was cooked on the fire, where there lay on the ground the bones and skins of the oxen and sheep, that had furnished the materials of recent repasts.[2] With the smoke from the burning wood were mingled the vapors and odors of the grease running into the fire, an odor that offends our nostrils today, but which charmed those of the contemporaries of Homer, in memory of the free feast recalled to them by it;[3] they found so much pleasure in it, that they a assumed the same taste in their gods.[4] It is possible that among the Achaian princes, the cooking did not occur thus in the megaron; the smoke has left no traces on the fragments of painted plaster collected at Tiryns and at Mycenae. Men did not extend over all surfaces the covering by painting to expose it to disappear in brief time beneath a coating of greasy soot. We have stated how the Mycenaean architect was able to obtain this result; we have assumed at the centre of the ceiling a sort of lantern furnished with side openings through which the smoke escaped, carried by a strong current of air.[5] The house known to Homer also had openings in the roof arranged for that purpose; but what is certain, is that the arrangement given to the orifice did not prevent the smoke from blackening certain part of the carpentry.

Note 1.p.99. Histoire de l'Art. Vol. VI. p.288.

Note 2.p.99. The same. Vol. VI.p.288; Odyssey. XX. 299-300, 383-384.

Note 3.p.99. Iliad. VIII. 549-550; Odyssey. X, 10; XII, 369.

Note 4.p.99. Iliad. I, 66; IV, 49; VIII, 549-551, etc.

Note 5.p.99. Histoire de l'Art. Vol. VI. p. 693-694. Pl. XI.

These comparisons leave the impression, that the house of Ithaca, if another Schliemann should find its site and uncover its remains, would have a small and mean appearance in comparison with what must have been the palaces of Tiryns and of Mycenae, such as their ruins have allowed us to restore them.

This inferiority of the later of the two types is again due to other causes. Chiefs of bands that scoured the seas, pillaged Egypt and had taken Troy, holders of an enormous quantity of the precious metals, possessors of vast lands that slaves cultivated for them, the sovereigns of Orchomenos and of Mycenae placed at the disposal of the architect and his assistants resources very different from what the richest nobles could do in the cities of Ionia, where the royal authority decreased, and where already arose the republican spirit. Thus is divined in the dwellings of Achaian princes, a seeking for the effect and luxury no longer known to the contemporaries of the poet. There does not seem to have been in the house of Alkinoos or that of Ulysses anything resembling either the double propylaeus, that the visitor finds before him when he enters the palace of Tiryns, or that broad ramp by which he ascends to that of Mycenae. All in those two palaces, the courts, megaron and principal rooms of the apartment of the women, must be more spacious and more decorated than in the house of Ithaca, where with the eddies of smoke filling the hall, men could not even think of the use of those frescos, that were the ornament of the Mycenaean house. Also there is nowhere the least mention of decoration applied with the brush on the surfaces of the edifices. There is no longer any question in regard to the residence of Alkinoos, that fairy palace, than concerning that of Ulysses, which is an exact copy o habitations of lords, where were seated more than once as dear and desired guests, the epic poets by whom were traced the first sketches of the epic period.

If in the halls where they celebrated the exploits of ancestors, those singers had had under their eyes paintings of war

of the chase, like those presented to the eyes on the walls of the palaces of Tiryns and of Mycenae, artificial forms of the kind of those on the internal walls of those buildings, enclosed within fanciful scrolls of spirals and among the foliage of marine plants, there would have been every chance for us to ha have been informed of it by some significant epithet or by some trait in comparison. For example, is there a motive better made for striking the imagination, and that leads itself better to allusion or description, than that of great winged , of sphynxes with mitred heads and floating plumes, whose broad wings tinted red and blue, cover with their variegated plumage the walls of one of those halls of Tiryns? [1] To explain the silence of the poet on that subject, it must be admitted that between the time when Mycenae flourished and that when the epic period closed, the art of decorative painting had fallen into complete disuse. This appears to be confirmed by the epithets by which the poet defines the appearance of the rooms of the house: What he recalls is always the polish of the brilliant surface. He does not state whether that is made of wood or a plastering applied to the wall. In the last case, the sole result that the workman sought to attain, when he laid the coating was to smooth the surface well. Homer never employs on that occasion the word "poicnilos" or varicolored, and of which he makes such frequent use concerning fabrics.[2] Perhaps also, and this supposition is very reasonable, thin slabs of stone were carefully cut with polished surfaces, and covered parts of the wall, occupying the surfaces between the timbers separating the courses of bricks. We have adopted an arrangement of that kind for the wal of the prothyron of the palace shown in the perspective view.[3]

Note 1.p.101. Schliemann. Tiryns. Plates VI, VII.

Note 2.p.101. (Greek). Odyssey. XVI, 449; XVIII, 206; XIX, 600, etc.

Note 3.p.101. This facing would be analogous to that whose remains have been found by Dörpfeld in certain parts of the palace of Mycenae. (Histoire de l'Art. Vol. VI. Figs. 177, 31 , p. 715.

On the other hand, the tradition has not been lost of another art, which was much cultivated in the course of the Mycenaean period; we wish to speak of the processes by which are appli on stone or wood, metal cut out in very thin leaves, or ind

were overlaid with precious materials like ivory and enameled faience. It is said in the Iliad, that the house of Poseidon is of gold, and that of Hephaestos is of bronze.[1] It is known what should be understood by these words "chryseos" and "chalcheos": there is concened a facing made of plates of gold or of bronze: but the habitations so qualified are not princely houses, these are the imaginary palaces of the immortal gods. All that the poet knows of the palace of Priam is, that it is built of stones well faced. It would then be permitted to believe that the poet, to give a higher idea of the splendor with which shone those divine edifices, has lent to them a sort of decoration, whose use left memories, and of which perhaps existed some remains in old monuments; the great funerary dome of Mycenae could not have then lost all its bronze stars. Yet from the Odyssey it would seem, that the taste for these overlays had remained, that there were still workmen skilful in laying metal on a ground, and in inlaying therein, cut into thin slices, precious materials of varied colors. That sort of decoration the poet had in view when he placed these words in the mouth of Telemachus, who is seized with admiration on seeing the palace of Menelaus:-

"Son of Nestor, dear to my heart, view
The splendor of the bronze in the sonorous house,
And that of gold, of electron, of silver and ivory." [1]

Note 1.p.102. Odyssey. IV. 71-73. We do not think it doubtful that the genitive "elektron" belongs to the masculine noun "elektros", that designates a natural alloy of gold and silver, and not to the neuter noun "elekhon", amber. Amber rarely exists except in small pieces, and we do not see how it would be applied to the decoration of large surfaces; but it is especially necessary to note the place occupied here by that word. The material that it represents is named between gold and silver; nothing is more natural than to refer to a metal partaking of both, as its pale yellow tint is midway between the red gleam of gold and the whiteness of silver.

The same ornamentation is still more sumptuous in the palace of Alkinoos, of which the poet wished to make something superior to whatever most beautiful had been seen by his hearers, who had traveled most over the world:--

"Walls of brass had been erected in all parts,

From threshold to back; all around extended a frieze of "kyanos";
Doors of gold prevented access to the well closed house;
Jambs of silver stood on the threshold of bronze;
The lintel was of gold, and of gold was also the cyma".[2]

Note 2.p.102. Odyssey. VII. 86-90.

By multiplying details, Homer seeks to give here a feeling of being dazzled; as many architectural members, so many mirrors, each reflecting rays of a different color. Doubtless nowhere was a house of a prince, where the different parts of the edifice were all equally resplendent; but those to whom were addressed these tales, would not have had the vision, that the narrator desired to suggest, if they had never seen anything similar to those shining coverings of metal.

Also only in the palace of Alkinoos does one see appear beside metal, as a decorative element a material that plays there the same part as ivory in the palace of Menelaus, that kyanos, in which has been recognized the blue enamels, that Egypt and Phoenicia made and exported in great quantity.[1] Ivory and that vitrified paste served to mix with the warm reflections of metal of the softest and most vivid tones, one with its milky yellow and the other the freshness of its blue. This mention of kyanos is unique in the epic period, and it is found in reference to the palace of Alkinoos; one can infer from it that this faience, an exotic product, was more rare and costly than ivory.

Note 1.p.103. Histoire de l'Art. Vol. VI. p. 559-560.

If the princely house of the Homeric age does no seem to have equaled that of the primitive age either by the amplitude of i its mass, by the convenience of its arrangement, or by the richness and elegance of its decoration, it was no less the edifice to which was devoted the principal efforts of the architect, during the period corresponding to the formation and completion of the epic period. For various reasons, the tomb did not then take the same development as in the preceding centuries; being entirely subterranean and attracting attention only by a stele without figures or inscription, it has left only slight traces. Those which I have found very careful and very ornate at Athens have above ground only a slightly marked relief; their arrangement remains very simple. As for religious architecture, it still remains in infancy. The temple has only a moderate importance, being lost in the vast extent of the sacred enclosure,

among the altars and trees that surround it. This must be so while there continued to predominate the power of the chief of the clan, the hereditary prince. The temple will increase, and all the arts will be applied together to embellish and to ornament it with their best, only on the day when the city is composed of equals, and will have no other master than the god, whose good will must ensure the success of all its enterprises. From that moment, its constant preoccupation and its passion will be to erect in honor of that god an edifice, that by its dimensions and by its nobility may be worthy of the power and majesty, that it attributes to its divine protector. It is then that, as we have the proof for Mycenae, Tiryns and Athens, temples will replace palaces, will arise on even the ruins of the royal habitations, where reigned dynasties long since vanished; to build and ornament them, each city small or great, jealous to excel its neighbors and rivals, will consecrate all resources at its disposal, in capital and in talents. The revolution that substitutes everywhere republics for the ancient monarchies co coinciding with the flight of every sense, after the appearance and diffusion of the epic period, taken by the soul of the Hellenic race, it will result, that during the period in which that people attains its maturity, the temple will be the masterpiece of the formative genius of Greece.

Chapter III. Sculpture.

There remains scarcely any work of sculpture, that one has serious reasons for attributing to the two or three centuries, that succeeded the Dorian invasion. Excavations have supplied but very few monuments, that can be assigned with some probability to that period. The epic poem is the sole document from which one is authorized to inquire, what could then be produced by art and industry. Now those poems maintain on the subject of sculpture a silence, that suffices to indicate how little that branch of form was developed among the people and in the time, when lived the authors of the Iliad and Odyssey.

Among the sentiments which the sculptor labors to satisfy by the procedure of statuary in the round or by that in relief, there is none known to contemporaries of Homer. The poets then began to personify their gods, to define them by an entirety of traits, which for each of the immortals varied according to the character of the part assigned to it by the work of thought. When Homer places on the scene one of the divinities of Olympos, he sees it there, and by the epithets by which he qualifies it, his hearers also see it with the eyes of the mind, in the originality of its individual appearance; they see Zeus differently from Poseidon, and Apollo other than Hermes. Between one and another, excepting in sex, everything differs, age and stature, arrangement of the hair, expression of the face, pose and gesture. It is the same for the goddesses. They are all represented as beautiful as the most beautiful daughters of Greece; but not to all are given the same style of beauty. This one, Aphrodite, is seen to be blonde, adorned with the freshness and graces of youth in its first flower. That one, Hera, has the port of a brunette and proud matron, whose body has given sons to Zeus without maternity having changed in her the nobility of contour; she has only to show herself in the meadows of Ida, for passions to awake at once in the heart of her immortal spouse. The huntress Artemis, who pursues wild animals in the forests, and whose unfailing arrows also give death to men, does not resemble Athena, the inspirer of wise designs and courageous acts, the protectress and counselor of Ulysses, the most crafty of heros.

The Ionian epic poet and the Greeks that listened to him thus have thenceforth a clear vision of the divine types, whose co-

outlines are very decided; but the moment has not come, when t the artist will be capable of giving a body of clay, marble or bronze to the personages, that the poet has brought forth. The latter has found in the treasury of an idiom marvellously rich and flexible, resources that have permitted him to sketch those figures, to make them sufficiently definite for the imagination to perceive them as living beings, each one with the peculiarities that distinguish them. On the othe hand, art cannot advance at the same pace as poetry; to realize its conceptions, the latter employs the words of the language; now these words are the first and most spontaneous of the creations of the intelligence. All vibrant still, among a people youthful, impressions received by them in contact with nature by the senses, they respond as a multitude to the appeal of the poet. he has need of new words to express a novel idea, to render a feeling not previously expressed; he derives them with sovereign freedom from the inexhaustible stock of roots at his disposal; the procedures of derivation and composition give him every facility in that respect. Those words, that he has gathered from t the lips of men, and those that he has invented when the current vocabulary no longer suffices him, seem hurried to produce themselves outside. Docile to the internal voice that evokes and creates them as the thought is born, they come of themselves to group themselves according to their natural affinities, and to assume in the phrase of the verse the place most appropriate for them.

It does not proceed the same, when this is no longer by means of winged words, to take the Homeric phrase, that the types are formed, but one is restricted to seek the contour in the material, to disengage it by the work of the hand. Like an unfailing spring, language gushes forth from even the profound depths of the soul; when this is animated and heated, it paints in the colors of passion, almost unconsciously. the mind, so to speak, has no consciousness of the secret effect by which it obtains the desired result. The material itself is the non-me, as the philosophers say. Man does not act directly on it; between the material and him is in intermediary, the tool, that requires a long apprenticeship. The first attempts made to employ it for the expression of an idea are resisted by the material; when this is stone, it defends itself by its hardness, that

does not allow itself to be cut until the time when one knows how to temper and sharpen th tool of bronze or of iron; if it be clay, it is worked even by its softness, but is poorly adapted to faithfully retain the impress of a form, before the oven of the potter is heated. To utilize metal, it is necessary to know how to reduce it to thin sheets, that are modeled by the hammer, or to melt and cast it in a mould. Another difficulty in sculpture is that it can only represent objects under the condition of certain sacrifices and by means of certain conventions. Painting and drawing deprive bodies of [illegible], that these arts only endeavor to recall by the indication of t the cast shadows. In the relief, this thickness is sensibly reduced; the different planes are thinned and are applied on each other. The figure in the round is not an exact reproduction of the reality. When one does not suppress its color, he is led to simplify it so much, that it becomes arbitrary and purely decorative. Only at the price of long experiments do even the best endowed peoples attain to the mastery of the procedures of execution, and to adopt modes of representation that permit the observer to reestablish by rapid intuition the true relations, those that the artist proposed to suggest to the mind.

That sculpture should be so greatly behind poetry should not astonish one. Not the sculptor furnished to the epic poet those figures of gods and goddesses to which he gives such a personal character. In his time it seems that the divinity had almost no statues in the sanctuaries of Greece. Nowhere in the Odyssey is a mention of a statue placed in a temple. Yet if men then had had the habit of placing those images in places of worship, Homer would have found more than on occasion of speaking of this. When he relates the return of Ulysses to Ithaca, he describes the sanctuary of the nymphs in which the hero stays with Eumeus before entering the city; he describes the top of the rock from which falls the fountain, the basin that receives it, the wood of alders that surrounds the sacred fountain by its shade, and finally the altar to which all persons bring their offerings. If there had been a temple that enclosed the images of the nymphs, that would have found a place in his description. An edifice, a group of figures, would be details that would modify too much the character of the whole, for it to be possible to pass over them in silence.[1]

Note 1.p.108. Odyssey. XVII. 205-211.

In the Iliad we see one temple statue appear, but only one, that of the Trojan Athena. The poet mentions that idol several times in one of those parts of the poem, that the boldest critics scarcely dare to term a later interpolation in the sixth canto.[2] At the prayer of Hector, Hecuba goes to place on the knees of Athena a richly embroidered peplum to soften her anger, which presumes a seated figure, a posture of which more than one example is presented to us by the archaic images of the goddess; it is sufficient to recall here the Athena of Endoios.

Note 2.p.108. Iliad. VI. 90, 273, 303.

Was the idol of Ilios of wood or stone? The poet gives no indication on that point. The work might be very rude, almost as barbaric as certain terra cottas of Mycenae or of Tiryns;[3] religious sentiment is always less attached to the form than to the idea. One sees it, even in the centuries where an art has already advanced to develop the esthetic feeling, remain faithful frequently to old and rude images, provided that they had been consecrated and as it were, deified by the veneration of preceding generations. What would tend to cause to be believed, that there existed from that time in the sanctuaries a certain number of these seated figures, are the epithets "on the beautiful throne, on the golden throne", that poetry attributes to several goddesses, for example to Eos, Hera and Artemis; the last of these phrases is explained by the habit of o overlaying sheets of metal on certain parts of the seats on which those idols sat. By this display of luxury was compensated the poverty of design of the figure. Further even the formless statues must be the exception. There is mentioned in the epic period more than one sanctuary, that of Zeus on Ida,[4], that of the Paphian Apollo,[5], that of the Delian Apollo,[6], and that of the Sperchios among the Myrmidons.[7] The poet does not forget to recall in that connection the existence of an altar, from which ascends the smoke of the sacrifices; he says not a word of the image.

Note 3.p.108. Histoire de l'Art. Vol. VI. Chap. IX. Sect. 2.

Note 4.p.108. Iliad. VIII. 47.

Note 5.p.108. Odyssey. VIII. p.363.

Note 6.p.108. The same. VIII. p. 162-163.

Note 7.p.108. Iliad. XXII. 148.

The divinity must have been represented at that epoch in most sanctuaries only by rough stones, raised stones. Those at the origin were only pieces or quarters of a rock untouched by a tool. The instinct of the symmetry had gradually led to cut them and to give them definite forms, that of a slab, a cylindrical or rectangular shaft; then when under the influence of poetry, minds accustomed themselves to conceive the gods as men like those alive on earth, but more beautiful and larger than them, the hand of the workman endeavored more or less awkwardly to express that conception. Without pretending at first to imitate nature, it sketched on stone the head and members of man, summary indications that must in time lead to the creation of the statue. In its most ancient types, that still retains an appearance that allows the primitive forms to be divined; in studying archaic art, we meet with the stele, pier and column statues.

Men were not yet there in the age when the epic period flourished; the patient labor that disengaged the statue from the rough stone had scarcely commenced. The statue was still found very rudely sketched, except in some cities more advanced, perhaps by having seen images of Asian origin and having sought to imitate them. The epic period is not absolutely ignorant of the existence of idol guests and mistresses of a temple; but on the other hand, it only mentions them in all, but a single and only time.

If then the art was not yet able to multiply statues, which their stature and weight made immovable in the sanctuaries, it would have been easier to fashion portable figures, made in their reduced dimensions to accompany the family in its emigrations, the warrior to battle and the dead to the tomb. The sepulchres of the primitive period have furnished many of those statuettes, some of terra cotta, others of stone, some of gold or bronze; in most of them the form is scarcely indicated. It seems difficult to believe that the Aeolians and the Ionians, for whom the epic poets sang, were not capable of modeling idols of such summary execution. Yet there is not in Homer a single word relating to images of that kind. These appear neither in the tales of voyages, in the scenes of combat, nor in the description of funeral rites. Still it is not probable, ... during two or three centuries, there was abandoned and interr...

a custom, which we have found established everywhere in the c course of the preceding age, and that we shall see reappear d during the entire duration of the classical age. What is deceptive, is that one is always inclined to imagine Homeric poetry to be a mirror in which is reflected, without losing a single one, all the traits of the contemporaneous reality. Now it is far from being so, we have already had occasion to state this in regard to funerary rites. The same remark applies to the r religion; if one judges it only by the epic period, Greece would not then have had other gods than the great gods of Olympus. In the Iliad and the Odyssey are but few allusions to that worship of the inferior gods, gods of pastures and of grottos, of fountains and of forests, nameless and obscure demons, that is a remnant of primitive feticnism, and that has never lost its hold on the souls. This is on the one hand, tha the epic period represents an ideal, which has been conceived by the poets. The poets are for that time, what the philosophers will be later; they are distinguished from the multitude by a greater power of reflection, by a superior power of abstraction' their thoughts are in advance of those of the men among whom they live. On the other hand, posterity has preserved but a very small part of the songs that charmed the infancy of Greece. The poems that we possess assume this, seeing many others, that were neve collected in writing, while those that were so before they had been lost to memory, all with bu two exceptions have disappeared in the work of antiquity. The Iliad and Odyssey alone remain. Those poems were born in Asian Greece, whose ideas and customs were not at all those of the inhabitants of European Greece; one would then err in pretending to seek there a complete picture of the life of the Grecian people in its entirety. Further, even for the group of the tribes to which we owe the completion of the epic period, that does not give what men have sometimes claimed to find there, a representation of their moral and social condition that comprises neither deformation nor omission. The poets have a very clear perception of the distance separating the society in which the lived from that marvellous and distant world in which their imagination had chosen a home; they did in their fashion what a learned poet would do todan. A secret instinct warned them tha this world of gods and heros could not be an exact copy of the

in which, for them and their hearers unrolled the uniform course of daily existence; to furnish the scene in which they placed their personages, they have utilized wha they had under their eyes, but only taking from that present which inspired only t the elements not at variance with the idea, that they had formed of the past. This was the sole means that they had for giving to their tales surroundings to correspond to the singularity of the adventures of a Ulysses, with the almost superhuman character and the prowess of a Hector, an Ajax and an Achilles, with the perpetual intervention of the divinity in the quarrels of men.

Finally, if there is no mention in Homer of a certain custom, that there is reason to believe very ancient, one can yet explain that silence by another consideration. How in two poems with very definite subjects and limited extent, Homer could hav found materials for treating and rendering all the aspects of the life of his people, of a life already complex? The action of the Iliad develops entirely in a besieged city, in the camp and on a field of battle. That of the Odyssey is more varied; yet it does not exhaust the diversity of the situations in which the Greek of that time could find himself thrown by the accidents of his fate. Thus one comprehends that certain forms of religion and of art, certain procedures in industry, certain peculiarities and customs have left no traces in the epic period; Homer has not spoken of them, because he had no occasion to do so. It is perhaps for that reason that the epic period is silent on the subject of those clay figurines, tha have come from Mycenaean tombs in such great numbers, and whose manufacture must have continued, at least where the rite of interment persisted. One divines how the poet was led to appear ignorant even of the existence of those rude images. If the obsequies of his heros were celebrated according to the same rites as were formerly at Mycenae those of the Achaian kings, he would have described the funerary equipment; those idols could have found themselves included thus in the enumeration of the objects received by the tomb; but in the rite of cremation as presented by him, all that the survivor confide to the earth is a handful of calcined bones contained in a metal vase; there is no place for the images of the tutelary divinities in that small receiver and in the hole enclosing it

in the base of the tumulus. Likewise also there is no reason to be astonished, if in the danger of combat or that of the sea, it is to Zeus or Apollo, to Poseidon or Athena, that the heros address their despairing or grateful prayers. The gods respond to that appeal by leaving Olympus to come to snatch their proteges from the steel of the enemy or the rage of the waves, a and the impassioned dialogue arising thus between the gods and their favorite children indeed has a grandeur differing from a few words murmured in a low voice before a mean annulet. The epic poet does not see the gods otherwise than with the noble and pure traits lent to them in his thought. Almost formless statues, th only ones that men knew how to produce then, did not correspond to the ideal that he conceived. His eyes were not fixed on them; he voluntarily forgot and seemed to disdain them.

The true and only sculptor is then the poet; the material in which he models the types, that he left to the sculptor of the future, is the language, that language both artless and learned, that while retaining the freshness of the vivid emotions of youth, consists of elements borrowed from different dialects, and is already in all the force of the term, a work of art. To impress on the human form such a character of beauty, that it a arouses in the soul the sentiment of the divine, is an undertaking that the sculptor is not yet in condition to attempt; he is satisfied by the role of decorator; the living form, that of man or of the animal, supplies him with motives for ornamenting the house and the furniture that equips it. There was a role already undertaken by the Mycenaean artisan, that the emigrants could not have failed to bring with them into Asia Minor some skilful workmen, trained to employ the procedures and the motives utilized by the industry of the Achaian age. Were the contemporaries of Homer especially inspired by the ancient models of the national art, or indeed did they demand by preference lessons from the objects of luxury fabricated in Egypt and Phoenicia, which came to them by Cyprus and Rhodes? The monuments having disappeared, it is difficult to state exactly the style of the artists, whose works attracted the attention of the poet. It is probable, that if they had been found, one would find there the trace of that twofold influence. More than one passage of epic poetry evidences the relations of the Greeks

maintained with the Phoenicians; the Ionian workmen could not remain indifferent to the examples given him by the men of Tyre and Sidon, those industrious pupils of Egypt.

The works mentioned in the epic poets could not all have had the same character. Some were connected by their workmanship with the traditions of Mycenaean art; what dominated in the o others was the more or less direct imitation of the types furnished by Phoenician industry. Among the rare objects that the poet mentioned to his hearers as worthy of admiration, one cannot truly divine which of the two styles they more particularly bore the impress, the national or the Asian style.

The question is not proposed even for those followers of Hephaestos, who lend to the lame divinity the aid of their shoulder, when he crosses his shop, for those statues of gold, "that resemble living young girls with intelligence and thought, voice and strength, who know the works of the immortal gods".[1] One is here in the empore of fancy. The poet has seen nothing like those golden virgins, that walk and speak; they are daughters of his imigination. All is lavished around Hephaestos. The tripods that he has fashioned are in motion, even accompanying him to Olympous and return with him.[2] At the sign of the master, the bellows swells and empties itself to make the flame rise.[3] Those marvellous servants make one think of the bulls with brazen feet, emitting fire from their nostrils, that in the myth of the Argonauts, the same Hephaestos sent as a gift to Aetes, king of Colchis.

Note 1.p.113. Iliad. XVIII. 417-420.

Note 2.p.113. Some. XVII. 374-377.

Note 3.p.113. Some. XVIII. 468-473.

Quite otherwise is the case of the figures of young men, that in the palace of Alkinoos hold in their hands lighted torches and illuminate the festal hall.[4] The object there described by Homer, he has found on his way or has heard it mentioned. That is what permits him to state as a significant detail, the "well cut plinths", on which are placed these statues. Those would be of gold, if one takes literally the word defining the material; but one should not forget that the poet is not an appraiser. He sees only the appearance, and what he proposes is to arouse the sensation of seeing. When he says gold, we must understand gilded bronze. Nowhere in Greece was gold ever as abundant as

in prehistoric Mycenae, and likewise have not been found figures, either executed in solid gold or composed of sheets of gold, whose dimensions are comparable to those supporters of torches; to fulfil their office, these must approach at least what is c called semi-natural. Besides, the epic language often attaches the epithets "gold" or "silver" to members of the edifice, that like the walls of a hall or the architrave of a doorway, cannot have been made of this precious metals, but on which were nailed, sometimes on the stone and sometimes on wood, plates of b bronze covered by leaves of gold or silver.[1]

Note 4.p.113. Odyssey. VII. 100-103.

Note 1.p.114. Histoire de l'Art. Vol. VII. p. 101.

As for the motive itself of these images, there is nothing to surprise us. From the highest antiquity Egypt caused the human figure to enter into the composition of its furniture; we have seen it utilizedthus in the handles of spoons and in arm chairs, where it supports the arms of the seat.[2] The same use of it was made at Mycenae in the handles of mirrors.[3] This type of torch-bearer, for which the modern decorator has a m marked preference (see the bronze statues surrounding the Opera of Paris) is not represented in the classical art of Greece; but it was familiar to archaic art; it is found in the paintings of Etruscan tombs and among the bronzes taken from those sepulchres.[4]

Note 2.p.114. Histoire de l'Art. Vol. I. p. 582, 583, 585, [illegible].

Note 3.p.114. Histoire de l'Art. Vol. VI. Figs. 386,387,388.

Note 4.p.114. Helbig. L'epopee homerique. p. 505.

These are again figures of wood or of silvered and gilded br bronze, that we divine in those gods, "forever immortal and exempt from old age", that were fashioned by the wise art of Hephaestos and watch over this same palace, placed at both sides of the doorway.[5] What we have found everywhere in the Orient at that place are factitious animals, such as the sphynx, griffin, bull or winged lion. The lion must have owed to his strength and to the fear inspired by him, the honor of being invested with that function in his natural form. We have seen in Phrygia rampan lions standing beside the doorways of rock tombs;[6] we hav seen them at Mycenae in the same position, surmounting the lintel of the gate at the entrance of the citadel. The poet alludes to a different mode of grouping. He evidently

represents to himself these guardians of the house as crouching or lying at right and left of the threshold, like the sphynxes before the temples of Egypt. What is original in that arrangement is the mode of substituting the dog, that humble companion of man either for the lion, the king of the wild beasts, or for all those composite monsters, in whom are contained traits, whose assemblage arouses the idea of an extraordinary and mysterious power. Is it not necessary to see there the effect of the innate tendencies of the Greek genius, of those revealed by the later manifestations of sculpture? The poet confides the guard of the house to the dog, and not to the sphynx or the griffin, because he has the taste for the simple and true; he has seen the dog in that place and that office.[1]

Note 5.p.114. Odyssey. VII. 91-94.

Note 6.p.114. Histoire de l'Art. Vol. V. Figs., 64, 65.

Note 7.p.114. The same. Vol. VI. plate 14.

Note 1.p.115. M. Helbig has made a conjecture in this connection, that appears to us more ingenious than probable.(L'epopee homerique. p. 498). He states that the Homeric language does not possess the words "sphynx and gryph", by which were later designated the sphynx and the griffin. Since the study of the Mycenaean monuments has proved to him that these exotic types were known by the Greeks much before the Homeric age, he asks whether in the lack of special terms, they did not then employ the word "chyon" to designate all these monsters invented by the Orient, and what suggests that hypothesis to him is, that he finds in the tragic poets of Athens examples of thes sense attributed to the word chyon; but what he forgets is, that in the two texts of Eschylus and of Sophocles to which he refers, and where the sphunx is called chyon, this word is explained here by the word "sphynx", that precedes it in t the same verse, and there by the epithet "rhapsodos"; all obscurity is thus avoided. If Homer had in view here the sphynx or griffin, it would have been easy for him als to have characterized those guardians by some significant epithet, that would have warned his hearers, that not ordinary dogs watched at the doorway of the palace of Alkinoos.

Those torch-bearers and dogs were there purely ornamental figures, that merely served to equip the palace of Alkinoos. It is not the same with a type to which the poet alludes on several

occasions, that of the Gorgon, i.e., the head of a woman, that by the character of her features was destined to cast terror into the souls that say her. That type had thenceforth the expressive value that it has always retained.[2] That head was figured on the border of the shield of Agamemnon, and as a central ornament on the breastplate of Athena. This was "the Gorgon with the menacing eyes and the terrible look"; it was the terrible and frightful head of the formidable monster, insignia of Zeus who wears the breastplate".[4] With the Gorgon Homer associates in the shield Fear and Terror, on the breastplate Discord, Valor and Flight, so many abstractions that assume form only i in the mind of the poet. The only ones that Greek sculpture seems to have personified, and yet has done so very rarely, are Phobos and Deimos.[5] On the contrary, very numerous monuments attest that the popularity of the Gorgon type never ceased. Archaic art frequently employed it, and tradition carried it back to the remote period to which are attributed the walls of Tiryns. Pausanias saw at Argos a head of the Gorgon in stone, that passed for a work of the Cyclops.[1]

Note 2.p.115. On the subject of the representations of the Gorgon, see the very systematic and very complete list drawn up by M. Jean Six:-- De Gorgone. pp. 100 + 2 pls. Amsterdam. 1885. The Homeric texts are studied there. p. 78-80.

Note 3.p.115. Iliad. XI. 36-37.

Note 4.p.115. The same. V. 738-740.

Note 5.p.115. Phobos, according to Pausanias, was represented on the coffer of Cypselos with the head of a lion. (V. 19. 4). Milchhefer believes that he recognizes Phobos and Deimos on two vases, one of which came from Caere and the other from Camiros. (Musee Napoleon. Pl. LIX). The first has the head and paws of a lion with the tail of a horse, the second is figured as a man with the head of a hore. (Archaeol. Zeit. 1881. p. 288).

Note 1.p.116. Pausanias. I. 43. 8.

This mask has not been found in the repertory of Mycenaean art; but except certain monuments where it is found belonging very near the Homeric age, what results from the verses mentioning the monster is, that from the time of Homer, this type was sufficiently known, that when the poet named the Gorgon, he aroused in the minds of his hearers a very distinct image. There is still no mention of the gaping mouth and the protruding

tongue, traits that only appear later to complete the type. What then appeared to characterize it is the eye, fixed and widely open, and in spite of the inevitable imperfection in rendering, the spectator with his lively sensibility sees it gleaming with rage and hate. Thus wishing to depict the expression of the face of Hector, who threw himself into the fight, the poet resorts to a comparison on whose effect he counts. “Hector”, he says, “has the eyes of Gorgon”.[2] The same conclusion is drawn from the last words of the tale of Ulysses to the Pheacians of his visit to the souls of the dead. “I should willingly”, he says, “have continued to converse with the heros; but the people of the dead ran with great clamor, and pale fear seized me; I feared that the august Persephone would send me from Erebus the head of the Gorgon, a shocking monster”.[3] That Gorgon’s head was then not something indefinite, for the contemporaries of Homer. In speaking before them, they perceived him at once, and the shudders that they experienced ended in confirming the idea, that whoever had allowed the murderous glance of the Gorgon to fall on him was changed into stone. The language held by Ulysses seems to imply that belief; yet one finds it affirmed only in the texts of later date.

Note 2.p.118. Iliad. VIII. 349.

Note 3.p.118. Odyssey. XI. 633-635.

What can best give the idea of the Gorgon as represented on the breastplate is the image, that forms the central motive of the shield of a combatant on a vase of Melos, an image in which is seen the most ancient representation of this type, that has come down to us. (Fig. 13).

On the shield of Agamemnon as on the breastplate of Athena, the mask of the Gorgon appeared in relief, modeled in a plate of metal by the process of repoussée. The assertion of Pausanias would give the idea that it was also carved in stone. By the meaning attached to it, it would have been in its place on the lintel of the gate of a citadel; but one meets in Homer with no allusion to that use of the symbol.

It has been thought that a mention is found of an important work of statuary in the three verses with which opens the description of a dance of young men and girls, that formed one the representations carved on the shiel of Achilles.

“There also, the illustrious Hephaestos combined a chorus

Like that formerly in the spacious Cnossos,
Dedalus executed for Ariane with the beautiful ringlets".[4]

Note 1.p.117. Iliad. XVIII. 590-592.

Some critics have thought that by the word chorus the poet designated the dancers themselves, that he compared those whose image decorated the shield to a group of figures that Dedalus had scluptured at Cnossos;[2] One recalls the statuettes of limestone found at Cyprus;[3] there is also cited a passage of Pausanias, that refers to a relief of white marble, some archaic work, that in his time was shown at Cnossos as the very work of Dedalus.[4] These comparisons only rest on an error in translation. We believe that one must here attribute to the word choros the sense given it by the ancient interpreters.[5] It designates not a dancing chorus, but the place where one dances. That is what it nearly always signifies in the epic period, a and which is indicated by the adjectives in composition of which that element enters. When the poet applies these epithets to a city, what does he wish to say thereby, if if not that there are wide and beautiful places for the dance?

Note 2.p.117. One may quote here as having adopted this opinion, Overbeck, Helbig and Robert.

Note 3.p.117. Histoire de l'Art. Vol. III. p. 586, note 2 and Fig. 399.

Note 4.p.117. Pausanias. IX. 40, 2.

Note 5.p.117. Aristonicos attributes this sense to the word choros. He is followed by Ottfried Müller, Welcker, Nitsch and Preller. The reasonsfor adhering to the opinion of Aristonicos have been particularly explained with much force by Eugene Petersen. Kritische Bemerkungen zur ältesten Geschichte der Griechischen Kunst. 1871.

Here is further what appears to remove all doubts. After having aroused the memory of the labor undertaken by Dedalus for Ariane, the poet continues thus:--

"There the youths and the seductive young girls, holding each other by the hand, struck the earth with the feet".[1]

Note 1.p.118. Iliad. XVIII. 593-594.

That adverb "entha" the translators forgot to render. Yet it has its value. Here as in the other representations, the poet commences by defining the theatre on which is played the scene that he describes. Further, this is "a vast and soft fallow",

or "an enclosure covered by an abundant harvest", or "a very beautiful vineyard," and at least once, the transition is made by this same word "entha".[2] It is probably that this place of the dance, whose construction was attributed to Dedalus, was merely a simple concreted area, just as there were in all cities: it must present a special character, that attracted attention. It might have presented an arrangement analogous to that of the labyrinth, that is seen represented on the coins of Cnossos (Fig. 14) and also on a vase with an incised design (Fig. 15).[2] Small and very low walls divide that area into curved paths in which the chorus stands, led by the jumpers that bound at the head of the file: in those curved ways so traced are performed those evolutions of the dancers, that are compared by the poet to the whirling of the potter's wheel. The complex design of the plan would favor the separation into semi-choruses, the formation of those "graceful lines that advanced, one before the other".

Note 2.p.118. Iliad. XVIII. 550.

Note 2.p.118. This conjecture was presented by Otto Benndorf (Ueber das Alter des Trojaspieles, after Reichel, Ueber Homerische Waffen). Benndorf believes that he finds in the dance, subject to the divisions of the plan, the first mention of an exercise, that under the name of the play of Troy.was in Italy very much in favor during all antiquity. The dance of the crane, that was celebrated at Delos in memory of the adventure of Theseus and Ariane, with its "perielixeis" and its "anelixeis" must resemble much the dance described by Homer.

It is then necessary to renounce in this passage an allusion to a group that might have existed at Cnossos. If the art of sculpture on stone had been cultivated around the poet, he does not appear to know it. On the contrary, for every work in metal, he lavishes details, which seems to indicate that the goldsmith had made a very marked advance in his time as at the court of the Mycenaean age. This one would divine from the manner in which the poet speaks of it; "a certain skilful man, instructed in the various arts by Hephaestos and by Pallas Athena extends grace over the head of Ulysses and on his shoulders".[1] One will also note the precision with which Homer in regard to Hephaestos' fabricating the shield of Achilles, describes the procedures of the goldsmith; of all the trades, that was evid-

evidently the one in which technical skill was then carried farthese.

Note 1.p.119. Odyssey. VII. 232; XXIII, 159.

The goldsmith took his motives everywhere. He had taken the Gorgon from the human figure, but the animal with the diversity of its forms offered to his inventive genius more varied resources. Homer describes the brooch of Ulysses used for fastening his mantle on the shoulder.[2] On the metal plate concealing the two tubes that received the pins of the clasp was represented a dog overthrowing a fawn, on whose back he had thrown himself; the trembling victim struggled beneath the pressure of the paws, that had torn its flanks. It i not probable that to this refers to a design engraved with the point; the delicacy of the details would have made the trace of the image invisible at a distance of a few steps. Now the poet evidences the admiration aroused by the sight of that jewel at the passage of Ulysses; he adds that the dog and the fawn were of gold. This l last indication of the impression felt is best emphasized by the hypothesis of a group composed of figures in very strong relief, executed in raised work in a plate of gold. As for the theme, the primary idea was suggested by one of those oriental monuments, on which one sees deer or stags torn by claws.[1] On the Mycenaean intaglios, the lion devours the same prey.[2] We are nearer the reality in th decoration of the brooch of Ulysses. The creators of that motive had never seen either lions or griffins maddened on their victims; on the contrary, the artist whose work struck Homer reproduced a scene at which his patrons could have been present more than once in hunting.

Note 2.p.119. Odyssey. XIX. 228-231.

Note 1.p.120. Histoire de l'Art. Vol. II. Figs. 280, 447; Vol. III, Fig. 482.

Note 2.p.120. The same. Vol. VI, Pl. XVI, 12; Fig. 428[14].

It was also in repoussee that the figures of animals and men decorated the shoulder-belt of Hercules, whom Ulysses met among the dead. "The shield was of gold; one saw on it all sorts of marvellous works; bears, wild boars, ferocious lions, combats, melees, murders and the slaughter of warriors".[3] Those verses are found in the passage where i found the trace of ideas of far more recent date, than those inspiring the author of the most ancient parts of the Nekyia. It was then not to commit

an anachronism by comparing this shoulder-belt to the diadems made of a thin sheet of gold, that have been collected in several tombs of the Dipylon and of Eleusis, diadems that could date from the 8 th or 7 th centuries.[1] What on sees on those bands is what is indicated by the poet, lives of animals, lions that surprise stags or attack men. Perhaps we shall find on o others of those bands battle scenes, like those presented to us as extending around their bodies, by the most ancient painted vases of Chalcis and of Rhodes. One further notes that the the description is far from being as precise here as in regard to the works previously studied. Works of art having become less rare, the rhapsodist no longer regards them with such amazed curiosity as the former epic poet; he contents himself with indicating the appearance in a general way, without emphasizing the details. Those stamped bands are no longer, like the shield of Agamemnon or the brooch of Ulysses, works unique in their kind, expressly created for a hero by the inventive genius of a master goldsmith. The brief charm of the description is then explained in the present case by the use of mechanical procedures, that permit the indefinite multiplication of the copies of the same composition.

Note 3.p.120. Odyssey. XI. 610-612. Helbig. L'epopee. p. 505-506.

Note 4.p.120. Athen. Mitt. 1893. p. 100, 128. Collignon. Histoire de la Sculpture grecque. Vol. I. Figs. 43, 44.

Among these creations in the arts of metal in which the poet is so strongly interested, there is one, the shield of Achilles, that sets apart the origin attributed to it and the place it occupies in the economy of the poem. The shield is the work of Hephaestos, the preeminent artist, and its convex surface is ornamented by figures that form very varied scenes, which the poet successively describes.[1] He devotes to that description no less than one hundred and thirty one verses, that certainly did not belong to the primitive nucleus of the poem.

Note 1.p.121. Iliad. XVIII. 478-608. One will find a bibliography of the works produced by the study of the restoration of the shield in Buchholz, Homerische Realien. Vol. II. Part 1, p. 385. Note 3. Collignon indicates the most important of those essays. (Histoire de la Sculpture grecque. Vol. I. p. 70, note 2). We shall content ourselves with adding the indication of

some later works. In some pages in the first part of a work t that unfortunately will never be completed, Henri Brunn has gathered the entire substance of his early researches on art in Homer. (Griechische Kunstgeschichte I. Chap. 2. Die Kunst der Homerischen Zeit, and particularly p. 73-85). We cite also an interesting memoir by Solomon Reinach, Le Bouclier d'Achille et les situles celtc-illyriennes. (Al. Bertrand and S. Reinach, Les Celtes dans les vallees du Po et du Danube. 1894).p.218-221. Finally, there are ingenious views on this in the Essay of W. Reichel. (Ueber Homerische Waffen. Vienna. 1898. pp. 151+55 vignettes). Kluge claims to distinguish on the buckler two different techniques, each of which was employed only for one portion of the work. (Der Schild der Achilleus und die Mykenische Funde, in Neue Jahrbücher für Philologie und Pädagogik. Vols. 149-150. 1894. Part 2); there is much subtlety.

For a long time, when one sought to take into account the idea, that the poet and his hearers formed of the work of that shield, it was imagined that they represented to themselves f figures in relief, executed in repoussee. They should have remembered the function of the shield; it must receive and ward off strokes of arrows, blades of swords. In the contest, when touching each other, the shields struck against each other violently. It is possible that men exposed to such blows some symbol, such as a Gorgon's head, that projected at the centre of the disk and met the eyes. One could give to that part a thickness of metal sufficient not to fear the effects of all those shocks; but it was not the same for the figures, that as actors in the scenes here designed by Hephaestos, were very numerous, could have but small dimensions, and consequently but slight projection. The relief would have been flattened at the first encounter, deformed so as to render the image unrecognizable.

There is then no reason for adhering to the hypothesis of a decoration formed of figures projecting more or less. In spite of its marvellous beauty, the shield of Achilles is not an arm for luxury and parade; the hero will cast it on his shoulders, when he goes to avenge Patroclus. A flat ornamentation was the best according with the purpose of the arm; but this decoration without relief, how is it to be understood, and to what technique is it to be referred? Must one think of figures engraved in line, like those that a point more or less skilful scattered

over the banded urns of Ppeneste and on the situles of Styria and of Carinthia? Doubtless it is impossible that the graver did not play its part here, serving to trace either the entire outline or to mark certain details in the interiors of the figures; but it gave only the sketch of the form, and the artist adhered to not deprive himself of the resources of the charm of color. He obtained this result by the use of different metals or alloys, bronze, gold, silver, "cassiteros", which was probably an alloy of silver and lead, perhaps mixed with tin;[1] he seems to have had at his disposal certain enamels that gave him blue or black colors. With these elements he could not think of reproducing the natural colors of objects' all that he proposed was to attract attention by the peculiarity of the color of certain personages and certain accessories; thus it is not alone by their high stature that Pallas and Ares are distinguished from the warriors, that the lead to the combat; by the warm tone of the gold of which they are made, those figures of the two divinities are detached in light on a dark ground, that increases their importance.[2] the same effects are more complex in the scene representing a vine or a vintage. Th black of the grapes shows on the gold of the vine; a palisade of silver surrounds the domain, and before it extends a ditch, whose hollow is indicated by a bar of that vitreous paste of dark blue, that the Greeks, who borrowed it from the Phoenicians, term kyanos.[3] Elsewhere is mention of a hedge of cassiteros and of daggers of gold suspended by baldrics of silver.[4]

Note 1.p.122. Berthelot. La Chimie au moyen age. Vol. I. p. 367-368; introduction a l'etude de la chimie des anciens et du moyen age. p. 250, 251.

Note 2.p.122. Iliad. XVIII. 517.

Note 3.p.122. The same. XVIII. 561-564.

Note 4.p.122. The same. XVIII. Verse 565-598. See 574, 577.

The difficulty was to explain how were harmonized and adjusted such different elements. A very recent discovery has relieved us from the embarrassment; the procedures employed by Hephaestos are the same that we have had occasion to study and define with regard to those Mycenaean daggers, whose curious decoration has been disengaged by M. Koumanoudis from the coating that concealed it from Schliemann.[1] In the bronze plate formi the field of the piece to be decorated, the tool made cavitie-

of slight depth in which skilful fingers armed with pliers placed bits of metal or glass in very thin sheets, fixed in the ground by the aid of a cementing substance, glue or solder. Thus the artist created a sort of mosaic, a polychrome facing, according to the time and skill devoted to it, and by the interest of the theme, the elegance of the design and the diversity of colors, he could impart more or less amplitude and variety.

Note 1.p.128. Histoire de l'Art. Vol. VI. p. 778-784; pls. 17. 18, 19; Figs. 367, 368; p. 811-812.

Doubtless a decoration of that sort does not form a work of sculpture, in the proper sense of the word. If as on one of the daggers of Mycenae, some of those inlaid bits slightly exceeded the surface of the ground, that projection was very small and almost insensible; one must not seek there the modeling obtained by superposition of planes. The appearance was rather that of painting; but it is due to the hammer, the point of the chisel employed by the workman to execute this work. The goldsmith, whether he projects his figures from the ground or inlays them flush with it, remains a sculptor.

If one is able today to define the technique from which was derived all that decoration, then is no longer any doubt in the matter of knowing by what principle the scenes traced by Hephaestus were distributed over the surface of the shield. The heros of Homer appear to have used at the same time the narrow oval shield, that covered the entire height of the body, and the round shield, that while leaving the legs exposed, more efficiently protected the bust; but the circular form seems to have been more commonly employed, as indicated by the epithet "well rounded", frequently applied to the shield, and the frequent use of the word "circle", where the poet describes the shields of the combatants, and shows how they make use of [illegible]. The decisive reason that further requires here the preference of the last type, is that it lends itself better than any other to the grouping of the scenes, to the necessities of a symmetrical arrangement. All archaeologists, that have attempted to restore the shield of Achilles, give it the form of a disk.

Note 2.p.128. Helbig. L'epopee homerique. Chap. 23.

The author of one of the best studied of these restorations, while adopting the disk type, has arranged it to be divided by two deep indentations, that give it the appearance of certain

represented on the potteries or golden plates of the age of the Dipylon, and what was later called to Boetian shield. (Fig. 16).[1] This method appears to him to have the advantage, that the double notch at least separates into parts the portion of the shield most distant from the centre; he believes that thus is obtained a form with divisions better marked. Perhaps it is so; but what makes this conjecture improbable is an epithet, that continually recurs in the two poems. The shield is termed "equal in all senses", i.e., every equal to itself; that epithet seems to exclude all idea of a recessed outline. Further, assume these two notches opened in the edges of a disk; they would have allowed arrows to pass, and the poet, in one of those episodes of the combat where with so much precision, would scarcely have failed to allude to some accident of that kind.

Note 1.p.126. A. S. Murray. History of Greek Sculpture. Vol. I. Chap. 3. This would also be the opinion of Reichel.

One can neither admit that the different scenes were scattered at random on the field of the shield, nor that the poet in his description proceeds by chance; but among all the motives enumerated, there is only one for which is clearly indicated the place it occupies on the disk. "Hephaestus also placed the river Ocean, that irresistible force, near the border that limits the shield of excellent work".[2] One divines from that trait the order that Homer followed; if he stops when he has reached the circumstance, that is because he started from the centre. The theme that he mentions first further lends itself better than any other to supply a central motive, as it is termed in the style of the atelier.[1] Where are placed, if not on watch in a sort of medallion, the earth, sun, moon and stars? There was the most natural place to group those celestial bodies, that man had adored before diverting himself to gods made in his own image. Those stars are seen thus represented on the oriental cylinders [2] and on the bezel of a Mycenaean ring;[3] but the form of the seal not being the same as that of the shield, the engraver in the intaglios has combined the sun and planets near the top of the field. The arrangement is different, but the principle is the same. On monuments that resemble more the shield, on metal caps with incised and repoussee designs, that were made in Assyria and Phoenicia has not yet been found so

motive in question within the in ernal circle; but one can recall in this respect two cups from Nimroud, where the principal motive of the decoration causes one to think of that to which Hephaestus had assigned the place of honor.[4] At the circumference, there are on one various personages, that with varied attitudes have entirely Egyptian countenances, and on the other is a series of passing animals; but in one part of another, what fills the greatest part of the field is the earth with its mountains and valleys, peopled by men and wild beasts. The idea is not entirely that of the Greek poet. That cavalier perspective also arranges the idea of indefinite space and of the life developed there, excited and maintained by the lights of day a and night, inexhaustible sources of heat and light.

Note 2.p.124. Iliad. XVIII. 607-608.

Note 1.p.125. Iliad. XVIII. 483-489.

Note 2.p.125. Histoire de l'Art. Vol. II. Figs. 330, 342, 3..; Vol. III. 426, 446, 457, 474; Vol. V. 504, 505.

Note 3.p.125. The same. Vol. VI. Fig. 425.

Note 4.p.125. Vol. II. Figs. 406, 408.

Between the middle portion of the circle and the narrow band of the sea that borders its circumference remains a wide field, where had found places the varied scenes, that the poet was p pleased to trace. Each of those scenes must have its enclosure; otherwise the observer would lose himself in these swarming figures, whose role and meaning he could scarcely seize; even the free intervals or blanks reserved between the different groups, would not have sufficed him to quickly orientate himself. There were required clearly marked divisions, separations whose principle was given by even the form of the surface to decorate. This principle is that of dividing this surface into a certain number of annular bands, each of which is limited by a projecting edging, and could in its turn be divided in the same manner into two or several compartments by rays toward the centre of the circumference. The rigorous symmetry of those concentric curves pleases the eye. Further, this division into parallel bands, combined with the division in o sectors, has the advantage of supplying the artist with enclosures already prepared for his scenes; by the arrangements it permits, it lends itself to emphasize the correspondences or the contrasts presented to the mind by certain chosen themes. This method was so clearly

indicated, that without previous agreement it was adopted among different peoples by the workmen, to whom was entrusted the task of filling the fields of elliptical form. That is proved in Egypt by a tablet of glazed clay anda golden breastplate,[1] and in Assyria by shields represented in the monuments, several examples of which shields have been found, and then also by the metal caps already seen.[2] This arrangement is again found in Phoenicia on the same cups of bronze or of gilded silver;[3] one finds it on the vases and jewels of the Mycenaean age,[4] as on the phaleras and votive shielsd, that have been collected from the very ancient tombs of Greece and Italy.(Fig.17). Finally, during the archaic period of Greek art, the ceramic painter employs no other method for tracing the principal lines of his ornamentation, when that must be applied to the bottom of a cup or plate, That expedient is first presented to t the mind, and the artist only ceases very late to resort to it, when he has attained to that grand taste, that seeks effect in even sobriety of ornament, in the desired simplicity of one or two figures detached in light on the brilliant black ground of the glazing.

Note 1.p.127. Histoire de l'Art. Vol. I. Figs. 580, 579.

Note 2.p.127. The same. Vol. II. Figs. 190, 215, 398, 399, 405, etc.

Note 3.p.127. The same. Vol. III. Figs. 482, 543, 544, 548-...

Note 4.p.127. The same. Vol. VI. Figs. 468, 469, 538.

The images of the central group, of the earth and the stars, perhaps had a certain relief, that enhanced it importance. In any case, one cannot regard them otherwise than as enclosed by a projecting fillet; that formed at the same time the internal outline of that zone adjoining this medallion. As for the number of the bands, when one assumes an arrangement taking into account the correspondences and contrasts indicated by the poet, it seems agreed to fix these at three, without counting t the ocean, that forms the border. With this border and the central medallion, we reach the number of five divisions.[5]

Note 5.127. One has sometimes sought an allusion to these 5 divisions in this verse:-- (Greek), XVIII. 481.

Now "ptuches" does not signify here circles but layers; it is in the sense of thickness, that there are five ptuches, as demonstrated by the story of the combat between Eneas and Ach-

Achilles, that covers the divine shield. The lance of the Trojan only pierces the two first layers (Greek); it is stopped b by the third. There were two layers of bronze, two of cossiteros and one of gold. (Iliad. XX. 264-273).

The representation of the city in peaceand that of the city in war filled the first band; the two descriptions have nearly the same extent. Thus one would divide this band in half between the two scenes, or rather between the two series of scenes, for each one of these themes is divided into several detached scenes, that are as many different expressions of one or the other of the two ideas here concerned, the idea of the blessings of peace and that of the evils of war. In the illustration of the second of these subjects are distinguished three successive moments or scenes. An attacking enemy is divided into two groups, surrounds and menaces the city, on the walls of which are the womenchildren and old men. A troop of warriors are led to the combat by Pallas and Ares and make a sortie. Finally an ambuscade is formed near the river, the desperate struggle that results for the possession of the herds between the besiegers and the besieged. One is inclined to seek in the other half of the band the same triple division, and finds it there, if he admits that one of the scenes is only expressed by one word, "festivals".[1] Then comes the nuptial procession, passing along the streets of the city, by the light of torchesand the noise of the hymeneal songs; then the judicial debate occurring in presence of the multitude on the market place. The poet is not compelled in that episode to depict everything wit the same detail; according as the mention of a certain subject arousesin his mind more or fewer images, he extends or reduces the description. Weddings amuse him; he adheres to giving a view of them and t recalling the noise, while for the repast, that does not offer such a varied spectacle, he refers it to the memories of his auditors.

Note 1.p.128. Verse 490. (Greek).

Without transition the poet passes to another series of scenes, where are represented the labors of the fields in the order of the seasons.[2] That is not divided like the preceding in- to two groups contrasted to each other. There is not a matter for antithesis; but by the idea from which they proceed, all these scenes have an intimate connection; they form an entire

entirety, which is like a rapid sketch of a poem analogous to the Labors and Days of Hesiod and to the Georgics of Virgil. The series of those scenes fill the second zone. The poet enumerates five of them, one of which could easily be cut into two scenes, if in a graphical representation he desired to reach the equal number of six for any reason of symmetry.

Note 2.p.128. Verses 540-589.

Labors are resumed in the spring; several plows turn over t the soil of a vast fallow. Summer is the harvest, with young men whose sickles lay the heads on the earth, the children that gather them and the binders that tie the sheaves. In a few words the poet seems to indicate a third scene that however oc occupies a separate compartment, while connected with the former. "At the side the heralds prepare an abundant repast beneath an oak; they have sacrificed a great ox that they bring; t the women aid them by sprinkling the flesh with white meal". A After the harvest is the repast, that assembles all the laborers that have finally reached the end of their hard labor. For the autumn is the vintage. With the harmony of his lute and h his sweet songs, the musician enlivens the workers and regulates the cadence of their steps in the path, where they carry t the baskets loaded with grapes. No allusion to winter, the tim when are interrupted the labors on the land; but after the life of the cultivators, the poet depicts the pastoral life, of which he represents two episodes. Here "on the banks of the sounding river bordered by frail reeds" is a herd of oxen attacked by two lions, that the dogs and herdsmen dare not drive away. There are large and white sheep that feed in a vast meadow, near which rise the huts of the shepherds with the stables and parks. In that band as in the other, the artist has sought an effect of contrast; near a scene of violence has he placed another, where all breathes calm and safety.

The study of the text of the very clearly defined character of nearly all the scenes described there, gives reason to believe that it is expedient to represent them as separated from each other by fillets, perhaps projecting less than those separating the bands, yet still sufficiently marked to form an enclosure. Thus one has a division in sectors, that combines with the division in annular bands.

In the diagram by which we have indicated the arrangement o

the scenes that decorate the shield, we stop the sector lines at the outer lines of the second band.(Fig. 13). This is the only theme remaining at disposal for filling the third zone, t the last mentioned by the poet, presenting a character of unity that we have found neither in the rpresentation of the two cities, not in that of rural life. This theme is the image of a dancing chorus composed of youths and young girls.[1] Doubtless all the persons here do not have the same attitudes. "Sometimes the entire chorus, as light as expert, turns rapidly round like the wheel of the potter, when it finds whether it can aid the skill of its hands. Sometimes the dancers separate and form g graceful lines, that advance one before the other. The multitude admires them and delights in these games. A divine poet with the accompaniment of his lyre animates them by his songs. Two agile leapers, when he begins, respond to his voice and whirl in the midst of the chorus". All that however is only t the successive moments, the varied figures of the same dance. The field is then not divided here into several compartments. By the continuity of an uninterrupted action and by the rhythm of the poses regulated by the musical cadence, this troop of dancing youths and girls has a character differing from that of the scenes filling the two inner bands; it is like a skill by means of transition from those complex scenes of the last t band, the ocean, that around all that life extends the uniformity of its peaceful and tranquil mass.

We have studied the work of Hephaestus, as if we admitted that it had an actual existence; all the scenes described, lik them have been distributed in our five bands. For it to have been thus, the poet must have seen, either with the eyes of th body or at least the eyes of the spirit, his figures distributed within an enclosure like that traced by our compasses. Otherwise, the correspondence between the description of Homer and our diagram would have been obtained only at the cost of commutations more or less forced. To them seems certain that the attention of the poet was fixed on shields or scenes of the kind that he enumerates, which were grouped thus, and the monuments confirm this hypothesis. Some exist that present that arrangement, and which appear to date back to an age very near that, in which was composed this episode. We have already cited as a type of the division in concentric zones a bronze disk (Fig. [illegible]).

The arrangement is the same, but with a more developed ornamentation, in one of the votive shields comprised among the objects deposited in the sacred cave of Ida in Crete, articles attributed to the end of the 8 th or the beginning of the 7 th century. (Figs. 19, 20).

One has started from that to affirm that the author in that entire passage has only described a work of exceptional importance and beauty, a rare waif from the shipwreck of Mycenaean civilization. Entirely covered by figures that excite curiosity, all gleaming with the splendor of the precious metals and rich enamel, this shield would have been preserved in some sanctuary or in the treasury of a prince; the poet would make himself the interpreter of the admiration aroused by that marvel of an art very superior to that of the new generational weak heirs of a world, where all was grander and more beautiful. The conjecture at first sight seems specious; however I believe that I can see more than one reason to divert from it.

There is reason to think that we know today at least all the chief types created by Achaian art. Now if the procedures employed by Hephaestos are indeed those practised by Mycenaean goldsmiths, on the other hand nothing has been found, either in the tombs of the funerary enclosure or in other sepulchres of the same period, that in extent and development of the composition are comparable to the shiel of Achilles. The shield to be seen figured on the Mycenaean intaglios can only have been wooden boards, on which were fixed on the edges and at the centre, bosses and plates of metal. A lion's head is awkwardly sketched in some lines on a plate of gold, and is the sole remnant that appears to have belonged to an object of that kind; it has been believed that there is recognized the circle attached at the middle of the arm.[1] The goldsmith seems to have utilized the figure of a man only to ornament objects of small dimensions, such as cups of gold, silver or bronze and blades of daggers. On all objects presenting a sufficiently large surface, on diadems, on long strips suspended from vestments, on a pectoral of gold more than 20 ins. wide, there is no decoration other than linear ornament, bosses, spirals and rosettes.

Note 1.p.132. Histoire de l'Art. Vol. VI. p. 977.

Note 2.p.132. The same. Vol. VI. Figs. 109, 537, 538, 539.

A final observation also lessens the part of probability, or

one might be tempted to attribute to that hypothesis. In none of the deposits of ancien objects, whose formation dates back to the time of Homer or at least tc an epoch very near it, nor in the cave on Ida or in the necropolis of the Dipylon, has a anything been found, that can pass as a work of Mycenaean manufacture. The pottery, jewels and metal vases collected there b bear the impress of the styles that succeeded the Mycenaean style, of the geometrical and the so-called oriental style. If in the states formed after the Dorian invasion, the rich and t the nobles still had in their hands the sumptuous products of the artisans of Orchomenos, Tiryns and Mycenae, they would have consecrated them to the gods or have taken them with them into the tomb, instead of applying for their offerings and funerary equipment to workmen, that could not rival even afar the earlier masters; we should find those legacies from prehistoric Greece mixed with objects of very much later date. Now it is not so, and one further explains that during the two or three centuries, which followed the descent of the northern tribes into Greece, the monuments of the earlier civilization were destroyed in great numbers, and that those alone remained which were deeply b buried in the earth. Between the fall of the ancient order and the establishment of the new one are divined the encounters of the peoples, murderous sieges and long blockades, pillaged cities, exile imposed on the vanquished, rapid flights with little baggage. Of all objects exposed to these chances, those that a also risked being most quickly destroyed were those, where gold and silver furnished the material; these were vessels, ornaments an show arms. It would be singular if such a work as the s shield of Achilles had passed without accident through two or three centuries of troubles and violence.

So then assuming that a work like that of the decoration of the shield were not above the abilities of the Mycenaean goldsmith, an object of such great value to all appearance, would have entirely disappeared long before the time when one of the later poets, who collaborated in the Iliad, inserted therein the episode that occupies us.

On the other hand, we cannot admit that in the time of Homer were artists capable of executing work like that here attributed t Hephaestos. If one attempts to restore the composition, he finds a considerable number of figures; there would be nearly

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as many as in the works belonging to a much later period of t the development of the art, in the coffer of Kypselos, for example, or on the vase known under the name of the Francois vase. The subjects engraved on the shield present scarcely less variety than those decorating the creations of the sculpture of the 6 th century, aod the scenes described by the poet would have been unintelligible, if the signification had not been clearly indicated by the correctness and variety f the movements. Was anyone then capable of attaining this result? It is allowable to doubt it. The vases of the Dipylon are the sole monuments t that one has some reason to regard as contemporaries of the last singers, that aided in the completion of the epic period; now with means of expression so moderate as those at the disposal of the ceramists, how could the goldsmith have clearly defined so many personages by their attitudes and their gestures? The goldsmith was certainly more skilful than the painter of vases; yet in the few jewels that appear to date from the Homeric age, there is nothing that permits one to attribute to that artist the mastery required by the execution of a work as complex as that described by the poet.

Me do not yield; they make a distinction by which they clai to solve the difficulty. "This would not exist, if we could a tain tc a more accurate account of the appearance of the images, that furnished his theme to the epic singer. We err in representing them to ourselves as always similar to those designed today by the artist, if he were given the Homeric description as a programme; at most we should restrict ourselves to seeking the elements of a restoration of the shield only in the reliefs and the vases of the 7 th and 6 th centuries. There is a manifest error. Those archaic monuments, in spite of their inaccuracies, comprise a multitude of personages and a precision of detail, that were required from the primitive artist. When he had to translate his ide into form, he indicated his thought rather than he expressed it. His figures scarcely had more value than signs, they were rather suggestive than representative. A large disk with a head and legs was a soldier; two or three soldiers were an army; two or three dancers were an entire chorus

Note 1.p.134. Brunn. Griechische Kunstgeschichte. p. 84.

There is truth in that observation. Yet we shall make a remark of importance. If certain very simple themes lend themselves

to such a summary mode of representation, there are others among those enumerated here by the poet, that adapt themselves to it less readily. For two bands of warriors that menace the city is no difficulty; but so that the observer may seize at once the sense of the image, there are required more ways to render such special attitudes, as those of the different groups of workers that labor in the harvest, of women that strew with meal the flesh of the sacrificed bull, or of the leapers whose bold bounds contrast wit the slow and cadenced steps of the files of dancers. If like the painter of the Dipylon, the goldsmith bends the human form into the dryness of geometrical drawing and thus deprives it of all life, how by that means could he clearly indicate the technical gestures of the harvesters, of the preparers of the meats and of dancers?

By certain traits it has been thought to divine, that the poet was here the interpreter of the artist, whose work he had under his eyes, limiting himself to explaining the sense of the scenes that he saw figured on the disk.[1] He does not seem to have always properly seized that sense; one can find the trace of the embarrasment, that he experienced before certain groups and errors that he committed in seeking to propose a plausible interpretation of them.[2] All that seems more ingenious than convincing; the reading of the text leaves us with a quite contrary impression, that of a poet entirely occupied in describing the scenes invented by him, and troubles himself little to know how the artist undertakes to represent by forms, what he easily expresses by words. Thus when it concerns a court debate on the agora or the preparations for a siege, the poet hears the words pronounced by the authors of the scene; he exhibits to us their ideas and projects. It is said that it is necessary for him to find a signification for the images engraved on the shield. Again pass to the lawsuit discussed before the old men; rigorously the goldsmith could have represented this theme so as to suggest to the observer some explanations of this kind; but how and by what artifice he could have shown by the arrangement of the groups alone, that among the enemies menacing the besieged city, there were some desiring to sack it, while others would be satisfied by imposing on the vanquished a division of their goods and lands? It seems to us, that what he felt here is not effort of a poet that endeavors to seize the intentions of the

artist, but rather the free course of an inventive mind, that not having to count on the conditions imposed by the material on every translation of the idea into relief, ordains at his pleasure the scenes conceived by his vivid imagination, reads the souls of the personages created by him, and enters into their feelings. The poet labors with his head; but what he demands from the concrete and actual works of the arts of metal is, to lend him the ground on which he projects the actors in those different scenes, which serve him for representing certain aspects of contemporary life.

Note 1.p.135. Brunn. Griechische Kunstgeschichte. p. 73-74, 76. This is also the opinion of Reichel. (Ueber Homerische Waffen. p. 46.

Note 2.p.135. This is what Reichel seeks to show in regard to the scene of the tribunal and to the siege of the city; thus in the last, the poet erred in not taking for gods the chiefs represented at the head of the troop, because they were larger than the other personages and had more beautiful arms.

Being given the point of view at which we are placed, one will not be astonished that we have not attempted to offer a figured representation of that shield; one does not restore only what has existed. Besides, even when we have admitted that the poet described here what he had seen, we should not think that he had reason to seek to reestablish the composition that decorated the field of the shield. This mode of omission is easy for us to justify. Aside from perhaps some finds, there is possessed not a single work of toreutics (so the Greeks termed the art of working metal wit the chisel and graver), that one can in a measure attribute to the age, that saw produced the last flowers of the epic period. The sole monuments with figures to which can be assigned that date are the oldest clay vases of the Dipylon, and nothing authorizes us to affirm that the fabrication was exactly similar in the works of the toreutian and in those of the ceramic painter. That style is unknown; we do not have the elements that define it. It has been thought to find a means of supplying the absence of the indispensable data; men have taken on all sides in the art of several peoples, scenes analogous to those that the poet describes, and all those scenes from various sources are joined in a framework similar to that designed by us.[4] Those borrowings were made indif-

indifferently from Egyptian paintings and Assyrian reliefs, P Phoenician cups of metal, vases from Corinth and from Chalcis; but what can be the value of the result obtained by that method? The sole interest that it presents is to show that the poet was in them unfamiliar to oriental art, or at least to ancient Grecian art; but the entirety thus formed necessarily presents incongruites; there is not that unity that could produce the illusion of truth divined and recovered.

Note 1.p.138. This is what Murray has done in the plate accompanying Chap. 3 of his History of Greek Sculpture.

Every attempt of this kind then appears condemned in advance to assured defeat. On the contrary, if one undertakes to reconstitute this composition by adopting for the execution of all the figures one and the same style, he must necessarily commit an anachronism. To draw them similar to those that the brush has thrown upon the vases of the Dipylon would not be thought; that mode of representation would appear too barbarous. One One would then seek his model either in the work of the Mycenaean goldsmith or that of the painter of Corinthian vases; but when Hephaestos fashioned the marvellous arm, Mycenaean art had long since terminated its evolution, and the potters of Corinth had not yet kindled their ovens. The choice tha one would make between the two styles then remained entirely arbitrary. It is better to renounce attempting the undertaking, yet without forgetting that the men addressed by the epic singer had known nothing, either by choice of subjects or by arrangement of the scenes, that would resemble the shield of Achilles, all this ornamentation would have would have failed to interest them. They would not have admitted the probability; what he desired to show them, they would have seen. The creation of the poet must then be regarded as a work of art, an ideal work that had its prototypes in reality. All the difference is that the poet did not have to restrict himself within the narrow limits, that practical requirements imposed on the artisan; thanks to to that indeterminate extent of the field, he could give to that imaginary decoration a complication that we shall not find in any of the best works of contemporary industry, if a fortunate excavation should restore them to us.

Like so many works of art, the shield presents two characteristics, one of which as evidence of its high antiquity distin-

distinguishes it from the works of classical art, while by the other it precedes them and already applies the principle. That diversity and that resemblance would be seized with difficulty, if you compare the shield of Achilles to the coffer of Kypselos and the Francois vase; we shall expressly choose the terms of comparison in the domain of that archaic art, that by its date is nearer the Homeric art than any other.

The comparison will first bear on the nature of the subjects. Now in the two monuments that we have chosen as representatives of the art of the 7 th and 6 th centuries, the themes treated by the chiseler and by the ceramic painter are taken from t the Iliad, the Odyssey and the so-called cyclic poems.

For us the action passes in this world of myth where the Greek imagination, after its education in the school of the epic period, has always felt itself more at ease than in the real world. From that time myth has interested it more than history; it has appeared more true, true with superior verity, less subject to doubt and revision than actual history; thus during a very long time until the hour of the last transformations of taste, it has only been by exception that the sculptor and the painter have sometimes sought their subjects and their personages elsewhere than in the repertory prepared for them by poetry. It is entirely otherwise with the description of the shield; there with some traits that could disappear almost without being perceived, one scarcely divines that Greece had thenceforth a mythology, that known by Homer. Thus Athena and Ares direct the sortie of the besieged.[1] Also in the conflict, with Discord and Tumult, the keres often named in the Iliad, drag the dead by the feet on the field of battle.[2] There are no other allusions at all to the supernatural in the midst of which is completed the action of the poem. Hephaestos comprised in his programme no scene, that might have as a stage either Olympus or Hades; he does not leave the earth, and the authors of the dramas played there are not the gods and heros, whose adventures and interventions in human affairs supply such rich material to the art of the later centuries. Hephaestos does what Helen did, when on her wide peplos she embroidered the image "of the combats that for love of her were imposed upon the Trojans, breakers of horses, and the Achaians with tunics of bronze."[3] What he represents is what he sees, certain forms and

certain appearances of contemporary life. Mycenaean art had s some habits; it worked on the same lines. The art from which was derived the shield of Achilles did not suffer the influence of the epic period; it did not place on the stage the personages that it had created. It had then not yet entered into the path into which the genius of form of Greece did not delay entering, when the Homeric poems and those connected with them had become the common patrimony and like the Bible to all the Grecian tribes. By this trait, this art is then cornected with the traditions of the past, a past that men have sometimes refused to place to the account of the Greek people, and to regard as the preface of its history.

Note 1.p.138. Iliad. XVIII. 516-519.

Note 2.p.138. Iliad. XVIII. 535-540.

Note 3.p.138. Iliad. III. 126-128.

On the other hand in the arrangement, the shield is truly G Grecian work, nearly related to the works of the following period. In the arrangement of the decoration invented by him, the poet is inspired by the principle that classical are never fails to apply, whatever the procedures and the material that it employs in the execution of its works. This principle is that there is a relation to be sought between the theme chosen by the artist and the field, where that theme is developed, between the different parts of the theme and the divisions of the field, these concurring by their dimensions and their relative situation to emphasize the main idea, and to illustrate all its sides. This result is obtained by very simple means. Each of the bands into which the disk is divided has its special purpose. The same zone combines by the band and a common idea scenes, that are the varied expression of the same thought. Here within these enclosures the scenes form antithetic series opposed in pairs; such is the case for those representing the city in war opposite the city in peace. Here they are pendants to each other without presenting possible contrasts; thus are grouped those representing the country labors. Elsewhere the same scenes, the image of a dancing chorus continues and extends the entire length of the annular band. The happy balancing of those motives, that correspond in the sectors of the same band, give the impression of a work created by a mind already very capable of reflection. There is here a science of compos-

composition, a vivid feeling of order and of its virtues that we hame not found, at least carried to the same degree, either in the art of the peoples of the Orient or in Myoenaean art. The decoration whose creation is attributed to Hephaestor only existed in the imagination of the poet; still in a certain sense, this is the first and most ancient monument of Greek sculpture.

The power of combination that strikes us here is a novelty is not revealed alone by this ingenious distribution of the motives. One also divines the effects in the first conception of the th theme. In spite of the number and diversity of the scenes, that has its unity; the secondary ideas that there express all those images are connected in an entirely logical order. It does not seem to us that there may be an excess of subtility in the analysis of the economy of the plan, presented by a learned historian of art. We cannot do better than to translate this page.

"The stage on which are produced the different manifestations of the activity of men is the earth, which is represented at th centre of the shield, covered by the vault of the heavens, in which the stars accomplish their eternal revolutions. The earth is supposed to extend to the ocean, that forms its limit on all sides. The contest breaks forth on its surface. There are disputed the ground and the wealth; until property is finally guaranteed by constitution of the family founded on marriage and by the establishment of regular justice. Then only can one undertake and properly carry on the works of peace, following the order of the seasons; but even the success of those labors is not the supreme purpose of life; they find their natural end and recompense in the celbration of joyous festivals.[1]

Note 1.p.140. H. Brunn. Griechische Kunstgeschichte. I.p.75.

Doubtless not under that abstract form was the mother idea presented for the composition to the mind of the poet; but it may well have been at bottom what we have just developed. Otherwise and without constraining it, we could not reduce it to these terms. In the sketch traced by Homer, one already feels the effort of an idea that dominates his subject, that he perceives all its details and connects them to the entirety, and that creative and ordina ing reason, that presided at the birth of the works of sculpture to which will later be devoted our

attention; but there will still be necessary for the artist one or two centuries of patient labor, for him to learn to translate into the language of form what the poet henceforth so clearly conceives and expresses with such masterly ease.

It has been desired to institute a comparison between the scenes figured on the shield and the Assyrian reliefs.[2] We do not see on what it can be based. Would it be on the fabrication? But the style of the sculpture contemporaneous with Homer is not known to us by a single specimen. Would it be on the general arrangement of the composition? But by virtue of the adoption of the system of concentric zones, the decoration of the shield has a unity lacking in the Assyrian relief, which is capable of extending indefinitely in length without knowing any limits, other than those of the wall on which it develops beyond view. Finally, would it be on the spirit itself of the work, on the feeling by which it should be inspired? But there again we perceive only differences and even contrasts. Truly in Assyria, in all scenes represented there is only one actor that counts, the king. The secondary personages around him, who appear by hundreds under the skilful chisel of the sculptor have no reason for existence other than to emphasize best the grandeur and power of the sovereign. All that imagery is only the glorification of the pride and caprice of a single man. There, if ever, is a monarchical art. Quite otherwise is the statement of the decoration of the shield. In that the entire description only once is mentioned the king, and that king has nothing of the majestic and terreble king of the sculpture of Nineveh, b before whom are piled a heap of severed heads, and who places his foot on the necks of rebels. This is a great rural proprietor, who "stands on his furrows, leans on his sceptre, and silently looks on the ears falling under the sickle, rejoicing in his heart."[1] The presence of this good-natured king in one alone of these scenes, is a detail without importance, that passes almost unperceived. Here the actor always on the stage is already the demos, i.e., the people, here the people of the city, that all throw themselves before the enemy to defend their menaced hearths, and that on their agora are present at the judicial debates presided over by the old men, natural magistrates of the growing state; there the people of the village where the men, women and children concur in the common labor. The

poet sings for all. All take their part in these festivals and these dances, where they seek recreation and forgetfulness of the dangers of war from discussions of interests and the rude labor of the fields. It is already the Greek life with equality of duties and of rights, which is established between all that forms a part of the same urban group, with the large place reserved for civic fe tivals, for enjoyments of feeling and imagination, for all that can rest and refresh the soul, restore its elasticity, that always risks being destroyed by the weight of the daily toil. This art is ~~one~~ addressed to all children of the city; by the spirit animating it is it truly republican.

Note 2.p.140. Brunn. Griechische Kunstgesch. p. 77-81.

Note 1.p.141. Iliad. XVIII. 586-587.

One is astonished not to find among the scenes figured on the shield scenes, that represent religious pomp and maritime scenes; but why assume that the poet desired in that episode to present a complete image of contemporaneous life? Certain aspects of that life struck him, and he has described them; if he has neglected others, this is because they were not at the moment presented to his mind, or that they did not enter the scheme that he had traced. In a certain measure, one can divine the reason of those omissions. Religious ceremonies are celebrated before the altar situated in the court of the house or on a high place; they did not yet have the importance and splendor, that they will assume when are erected those temples, which will soon be erected. It is the same for the absence of ships. The Greeks do not live on the water like the borderes of the Nile and Euphrates; their civilization is not closely connected with boating; their strong cities were at some distance from the sea, and strangers are charged with exporting the products of their soil and industry. The Trojans have no fleet; the Greeks in the Iliad possess only transport vessels. The great development of the Ionian marine is later than the time when the epic period chose its themes and decided on contours.

We shall not occupy ourselves here with the shield of Hercules. It is tot that this description does not lend itself to interesting observations, that it would not be profitable to compare it to that of the shield of Achilles, which suggested its idea;[1] but the epic fragment where it is developed in nearly two hundred verses does not precede th 7 th century. What

permits the indication of that date is especially the character of the decoration. That still comprises scenes taken from real life; but one also finds there themes drawn from mythology. Thus in one zone is the combat of the Centaurs and Lapiths, at which Athena and Ares are present, just as Apollo witnesses it on one of the pediments of Olympia. Elsewhere Perseus pursues the Gorgon, the chorus of immortals led by Apollo and the muses, that in which the Fates are each named. Nothing better marks the difference in time. The description to which is attached the name of Hesod bears the impression of the age when the epic poet had completed his tour of Greece, and began to impose on the imagination customs entirely novel. This tends to no longer see life except through myths, the feelings and ideas advanced in it at the sight of life, it henceforth translates into the language of myth.

Note 1. 142. Brunn. Griech. Kunstgesch. p. 85-88. Studniczo has devoted to this shield a study in which are found all its ordinary qualities. (Ueber der Schild des Herakles. 1882. In Serto Fortekicono).

To obtain an idea of the art of the sculptor in the 9 th and 8 th centuries, we have only been able to use Homer's descriptions. Yet the tomb of the Dipylon furnished in 1891 monuments, which there is reason to regard as contemporaneous with the completion of the two great epics. These are figurines of ivory, that were found in an interment, which the style of the v vases enclosed scarcely allows one to place later than the first olympiads.[1] There are five of them.

Note 1.p.143. We have collected all that concerns that find in an Article in Bulletin de Correspondence hellenique. 1895. p. 273-295. We thank M. Homolle for the courtesy with which he has lent us the cuts of the Bulletin.

Of two of these remains here only the upper part of the body as far as the bottom of the thighs (Fig. 21), and there are the legs below the knees. (Fig. 22). Most are so broken that nearly all details have disappeared; but even on those images that have suffered most, one still sees the pose of the entirety of the form sufficiently to recognize that the five little figures are at a different scale and merely replicas of the same type. We shall define this type by that of these statuettes, both largest and best preserved of all. (Plate III and Fig. 23).

The statuette is 9.45 ins. high and is mounted on an ivory tablet, being fixed to it by iron tenons. The same tenons also serve to attach to the shoulders the arms in separate pieces; by the model of the chest it is recognized that the image is that of a woman; the projection of its bosom is particularly apparent in the profile view. No trace of clothing; nudity appears complete, and yet here and in another of those images (Fig. 24) is a line tightly drawn above the haunches, which gives the idea of a narrow ribbon. Is that a girdle, or indeed is it necessary to see there only a wrinkle in the flesh, merely a conventional indication that concurs with the exaggerated reduction presented at that point by the figure, to mark the border that separates the thorax from the abdomen? I incline to the second hypothesis; tendencies of that kind are found in the most ancient Greek sculptors.

The figure is in the attitude of absolute immobility. It has the legs in contact, arms hanging with hands extended and placed against the thighs. The hair is concealed in front by a high cap (polos) decorated by a fret, and falls very low behind, to between the shoulders. It is divided into several tresses by vertical lines in each; the twisting of the locks composing it is indicated by oblique hatchings.

There is some stiffness in the manner in which the cap is p placed on the brow, in the nearly right angle made with the neck by the shoulder, in the movement of the arms and legs. T The body is restrained too much above the haunches and the abdomen is lank. Yet the proportions do not lack correctness; the sculptor has well marked behind that projection of the pelvis, which distinguishes the woman from the man. One even feels in the slender stature given to the figure a certain instinct of elegance.

What is less successful is the head; it is too large for the body. The artist felt a real embarrassment, when it was necessary for him to render the face with the complexity of its details. The ears are placed too high, the eyes are too large; the nose is too heavy, the lips are too thick; the chin is flat. There is less inexperience in the manner in which are treated the extremities. The hands are only roughed out, and if the f feet are broken off, it is seen by another of these statuettes, that the artist made no effort to model them with precision.

The other images reproduce without notable variations the same motive. One of them is almost intact. (Fig. 25). We have described a reduced copy of this; the cap is only decorated by vertical lines, the graver was found too large to trace the turns of the fret. As for height, two other images are a mean between that entire figurine and the large statuette. On one only th feet are lacking (Fig. 24); but the entire face has disappeared. The othe is broken a little above the knees.(Fig. 21). The head was detached and was carelessly replaced; it was believed at the first moment, that there was seen the trace of a pointed beard, whose mass would have been indicated, as in certain Cypriote statues, but on examining it more closely, it was recognized that this was a mere illusion, explained by the form of the break.

Besides pottery and the statuettes, there were collected in that excavation quite numerous pieces of bone inlays, that must have served to ornament boxes or other objects of the same sort. These are disks ornamented by a star, lozenges pierced by a hole, a rudely imitated dolphin. finally, one also obtained from that excavation three little couched lions lions lying down, of Egyptian faience covered by blue enamel (Fig. 26), beneath the plinth on which they rest are distinguished hieroglyphic characters, some of which can be deciphered again. (Fig. 27). There is read the name of Ahmes, which was used in all times in Egypt, but which seems to have become in more frequent use about the end of the New Empire under the Saite princes.

Note 1.p.145. On other finds of objects, such as scarabeuses, covered by the same enamel, made in the tombs of this epoch, e see Eph. arch. 1879. p. 175, No. 2; Milchoefer. Die Anfänge der Kunst, p. 45, and Helbig. L'epopee homerique. p. 93. No. 6.

These lions are certainly of oriental fabrication. the statuettes could also then be objects imported from outside. This hypothesis has presented itself to the minds of some archaeologists, that have seen these figurines. We do not share that o opinion.[2]

Note 1.p.146. Homolle. Bulletin. 1891.p.441. Stais. Deltion. 1892. p. 9. Also to Leochopoulos inclined to that opinion. (Revue des etudes grecques. Vol. IX. p. 445-446).

Note 2.p.146. Our impression is that of MM. Brückner and Pernice, the authors of the excavation. (Ein Att.Fried. p. 129-130).

The ivory came from Africa; but one knows from the tombs what consumption was made of it in Mycenaean Greece. For the following period the Iliad and Odyssey attest that in the world in which the Homeric poets lived, industry commonly used ivory for decorating jewels, arms and furniture; the question is then not that, it is entirely in the poseand the characted of the figure. What must be found, if one wishes to establish that these statuettes were not modeled in Greece, are oriental prototypes of which these are copies. I have sought those protypes in vain: in what remains from Egypt and Phoenicia. This is not the pose that Egypt usually gives to its figures; men and gods are almost always represented there in the attitude of walking, the left foot in front; it is further rare in its statuary for women to appear nude, that they do not at least have a light drapery fixed around the hips. If in the ivories of the glass cases of the Egyptian museum in the Louvre are ivories, that approach in pose and appearance the statuettes of the Dipylon, nothing indicates their source or age, and some seem to be of quite a late epoch; it further seems that those may be handles of mirrors, of knives or of spoons; now those Attic statuettes by the uniformity of their attitude and the plinth that supports them, can scarcely have been merely idols, and they have nothing that recalls the Egyptian images of a divinity.

This crototype that we have demanded from Egypt without result, Phoenicia neither supplies. Clothed in a long peplos, is presented the female figure in monuments, whose Phoenician origin is undoubted.[1] On the other hand, there is a sensible relationship between the statuettes of Athens and the image of a woman modeled on an ivory plaque, that we formerly classed in the number of works, that could be placed to the account of Ph Phoenician workshops,[2] but we do not believe that this assignment should be maintained. The plaque came from the necropolis of Camiros; now that we have better studied Grecian archaism, we should incline to reduce by much the part proper to give to Phoenician industry in the inven ory of the equipment of the most ancient tombs of Camiros. We should not hesitate then to recognize there the work of a Greek artisan.[3] The type reproduced by that relief is foreign to oriental art, or at least is only found there very late, when that could be inspired in its turn by models created by the coast tribes of the Egean sea;[4]

on the other hand it is represented in the oldest cemeteries of the Cyclades by numerous examples, by those flat figures of very rude work and cut in marble, some examples of which are also found at Delphi and Athens;[5] it is also by Cypriote terra cottas, that do not belong to a later antiquity.[6] The ivories of Camiros and of the Attic tombs are distinguished from the primitive statuettes only by the use of a different material, by a fabrication already more skilful and by an unique trait; in the figurines of Amorgos and o Antiparos, as in those of t the cemetery of Alambria, instead of the arms being pendent a and attached to the haunches, they are crossed on the chest beneath the bosom. Like that is the same complete nudity, the same appearance of absolute immobility. The resemblance is more marked than the difference.

Note 1.p.147. Histoire de l'Art. Vol. III. Figs. 281, 617.

Note 2.p.147. The same. Vol. III. Fig.,619.

Note 3.p.147. See in Bulletin, 1895, p. 289, No. 2., the list of several other monuments, that we believe have been erroneously attributed to the Phoenicians.

Note 4.p.147. Rendered very probable by Solomon Reinach. (Les deesses nues dans l'art oriental et dans l'art grec, in Revue archaeologique. I. p. 378-394.

Note 5.p.147. Histoire de l'Art. Vol. VI. Chap. 9. Sect. 2.

Note 6.p.147. The same. Vol. III. Figs. 374, 375, 379.

This theme of the upright nude woman with arms fixed to the thighs, we find again in a bronze figure of the museum of Athens. The statuette is much corroded, and appears to date in a distant age. The head is borne on a very long neck, and is as if cut with a knife; the nose is placed very high. No cap, but aside from that detail, the idea of the fabrication strongly recalls our ivory figurines.[1]

Note 1.p.148. De Ridder. Catalogue des bronzes trouvees dans l'Acropole d'Athenes. 1896. No. 771.

The type presented to us by the relief of Camiros, the statuette of the Acropolis and the statuettes of the Ceramicos thus appear to be nothing but a variant of tha created by the tribes, whose work is especially known to us by certain cemeteries of the Cyclades. The fabrication of those images was intimately connected with the most ancient of all religions, the worship of the dead. It was followed beyond even the Mycenaean age. On

One of those figurines has been found at Thera in a tomb, that enclosed a vase of geometrical style.[2] All those statuettes fo found in the tombs, that are of marble, clay or ivory, can only be images of a divinity protecting the dead, images thought to play a part analogous to that filled in Egyptian sepulchres by the figuines of glazed clay, that are called "oushebti" or respondents. One will note the cap placed on the heads of two figurines; it already appears sometimes in the primitive terra cottas, and is a headdress that classical art reserves for divine personages.

Note 2.p.148. Sitzungsberichte of Academy at Vienna. 1873. p. 240.

If it be proper not to see in our figurines Phoenicial importations, but the development of a type created by the Greek imagination, it must be there in a sensible relation between the style of these statuettes and that of the other works, that one is correct in attributing to the same period. Now that resemblance exists; it will strike the eyes of every critic, who guards himself against what is called the oriental mirage.[3] Doubtless the sculptor is here in advance of the ceramic painter, as the goldsmith of the Mycenaean age was; but aside from that, there is in both the same interpretation of the human form, the same elongated proportions, the same awkward rendering of the lines of the face, the same horizontal shoulders, the same triangular shape of the bust, the same conventional contraction of the body at the top of the hips, the same negligence in presenting the hands and feet. If one considers the only accessory comprised by the state of entire nudity, there is the same agreement; the ornament of the cap of the principal figure is nothing but the fret; now this motive is again found on the same vases that accompany these ivories in the tomb from which they were taken.

Note 3.p.148. S. Reinach. La Mirage oriental. 1893.

From the fabrication of these vases, where the geometrical style has not yet attained the rigor of its principle by the insertion of the human figure, we incline to believe that the entire deposit to which belong these ivories dates rather from the 8 than the 7 th century. Our statuettes would then be earlier than the oldest sculptures of colored tufa found on the Acropolis of Athens. The temples that the latter decorated could scarcely have been built before the 7 th and 6 th centuries.

With the ivories of the Dipylon the historian is perhaps nearer the Athens of the Erechtheides than that of of Pisastratos and Hippias; but he cannot regard withindifference the figures in which he believes, that he has to salute the most ancient monuments of Attic sculpture.

The facts are very different in the figurines of terra cotta tha appear to come from Beotia, and that must likewise be idols protecting the tomb.[1] Those dolls, for one can scarcely g give them a different name, have the form of a bell. In some t the legs are attached by a metal wire below that bell (Figs. 28, 29); others have not received that appendage. (Fig. 29). Two clay knobs mark the places of the breasts. By the manner in which the belly of the bell is decorated by designs traced with the brush, it seems that the workman desired to represent the goddess as clothed. The fabrication is singularly more barbaric here than in the statuettes of Athens, and it has been based on the character of the motives that ornament these images, to declare that they are earlier than the vases of the Dipylon; it has been said that the human figure did not appear in the repertory of the motives, that are drawn on the bodies of these dolls. It is necesssary to renounce the use of this argument; the Louvre has recently acquired an idoo of this kind, a around which the brush has traced a scene that is one of the favorite mottoes of the painters of the Dipylon, dancing women holding each other by the hands (Fig. 31). Even before the proof was thus made, one could compare these figurines to the Attic vases; it would have sufficed to note the resemblance existing between the rendering of the head in the paintings of those vases and in the modeling of the Beotian statuettes. The same long neck, a cylinder that never ends; the same long pointed chin; the same projection of the nose, that projecting between two great round eyes with no indication of a mouth, gives to the whole the appearance of the profile of a bird. There is in the paintings of the Dipylon such a convention, that is no less naive than that, which on these dolls serves to indicate the a arms, here represented by two rods of clay (Figs. 23, 31), and there being painted on the body of the bell (Fig. 29).

Note 1.p.150. Holleaux. Figurines beotiennes en terre cuite a decoration geometrique. (Monuments Piot. Volo I. p. 12-42).

These rude images may then be contemporary with the vases of

the Ceramicos, and one cannot be surprised to find them very i inferior in fabrication to the statuettes, that were carved at Athens at about the same time. The precious materials were entrusted only to selected artisans, while the potter manufactured cheaply for the people.

A work of sculpture that can be regarded as nearly contemporaneous wit those dolls is a plaque of terra cotta found at Egina near a destroyed temple, mixed with the remains of all s sorts, vases of the geometrical style broken into a thousand pieces, broken idols, scarabeuses and little enameled earteen pots.[1] The image was made by stamping; it represents a woman in fron view, that a sort of skirt clothes from the girdle to the feet. The upper part appears nude. Both hands are applied to the breasts and seem to press them to force out the milk. The process employed, the rudeness of the execution, the arrangement of the hair, all concur in giving to the relief an appearance of very high antiquity. There are at the top of the plaque two holes, which indicate that it was suspended from a wall. This was a votive monument, and to all appearance was an image of Aphrodite.

Note 1.p.151. Ephemeris. 1895. p.283-284.

If we have said nothing here of glyptics, it is no because there do not exist intaglios dating from the 10 th, 9 th and 8 th centuries; but it is very difficult to distinguish these intaglios from those dating in the Mycenaean age, or from those belonging to archaic Grecian art. When the engraver attacks s stone or metal and only reproduces the forms and types created by the statuary, by suiting them to the narrow dimensions of the bezel of a ring. Now the works of statuary are lacking to us for the entire time, that corresponds to the completion of the epic period. Every criterion thus is lacking for us; we cannot define by certain characteristics, among the intaglios that bear the mark of high antiquity, those which it is agreed to attribute to the period opened by th Dorian invasion. Very few intaglios have been found in the tombs of the age of the Dipylon; to the small number of those mentioned we add one that came from Beotia, a flat and nearly rectangular stone, where the engraving represents a woman clad in a long rope and raising the left arm, faced by two birds symmetrically turned to the outside. (Vignette on p. 153).[1] The theme is borrowed from the re-

repertory of the Mycenaean artists; but the execution is summary and negligent. It is the same for some other stones, that are attributed to the same period with some probability. On so some on which are the figures of men and of horses, it is believed are seen the marks of the procedures in design that characterize the geometrical style.[2]

Note 1.p.152. Collignon. Note sur des fibules a decor grave. (Memoires de la Societe des Antiquaires. p. 55.) Fig. 2. Height of stone is 0.51 inch.

Note 2.p.152. Furtwängler. Königliche Museen zu Berlin. Beschreibung der geschnitten Steine in Antiquarium. 71 plates in phototype and 120 figures in the text. 1896.

Then we should refer to another time by all means the sequence of the history of glyptics. What completely justifies the part that we have taken, is that nowhere in the two poems is a mention of a seal. When Ulysses is ready to depart from Alkinoos, and is occupied in placing in safety the presents made to him by the Phaeacians, he shuts them in a coffer; but he does n not have th idea of attaching his seal; by means of a complicated system of knots he seeks to prevent the opening of the c casket during his sleep in the course of the voyage.[3] The procedure that he employs gives reason to think, that men very rarely used a seal in the society where Homer lived. Why had they renounced the practice, very general in primitive Greece, and that later would become in current use? We do not know; but the indications to which we have called attention appear to render probable the hypothesis of a decadence and temporary eclipse of glyptics, which would reappear with sculpture after the 7 th century.

Note 3.p.152. Odyssey. VIII. 446-448. Yet Furtwängler mentions some seals among the intaglios, that he attributes to this period. (Nos. 78, 79, 81, 88).

It is with painting as with glyptics. No stroke of fortune h has preserved to us for this period the remains of frescos of the kind of those, which by a sort of miracle, have been found beneath the ruins of the palaces of Tiryns and of Mycenae. On the other hand, one finds nothing in either poem, that is related to the art of the painter. It is probable that in the interiors as on the facades, the plastering received a coloring, and that grounds of some extent were enclosed or divided into

panels by bands, whose color was more vivid than that of the ground; but no allusion is made to scenes that decorated the princely house. This silence is explained; then the ceramic painter no longer knew how to give any decoration to his vases other than geometrical ornament, and then could not be found in Greece artists, whose brushes were capable of representing in the panels of the megaron, as at Tiryns, the chase of the wild bull, or as at Mycenae, processions of horses and warriors, of scenes of combats.

Chapter IV. Industrial Arts.

I. Ceramics.

One recalls the gray pottery of Hissarlik, whose Remains are found in great abundance on the Trojan hill, from the second to the fifth cities.[1] This is a pottery of paste maxed with small pebbles, with thick walls fashioned by hand and decorated by incised designs filled with white clay.[2] The same rustic pottery also abounds at Tiryns and Mycenae; it is le s rude there, and is there found with vases decorated by the brush. Otherwise only on th sites of prehistoric cities does it appear, in company with the works of a more skilful art.

Note 1.p.154. Histoire de l'Art. Vol. VI. p.895-898. Figs. 442-453.

Note 2.p.154. Athen. Mitt. 1893. p. 111, 118.

On the Acropolis of Athens in the gravel that forms the ground on which were placed the edifices of the 5 th century, have been collected fragments of these monochrome vases. There is one where a projection from the massive wall is pierced by one of those holes through was passed a cord, before men knew how to form the ears from the body of the vase. (Fig. 33). The appearance is here very primitive. The vase perhaps dates back at the time when the Acropolis received its first inhabitants; but one would no attribute such high antiquity to fragments on which are incised triangles, concentric circles, chaplets of whorled leaves (Fig. 34); those motives rise in light on a ground of well polished brown clay.

The presence of these fragments in the subsoil of the Acropolis furnishes no indication of date; but even that pottery is found in the tombs,of the Ceramicos of Athens with painted vases. Here is a fragment of an arybballos with figured surfaces; The workmen stamped in the clay an ornament whose curve is scratched in fine lines, and makes one think of certain shells (F (Fig. 35).

Until when was this fabrication prolonged? It had not fallen in (desuetude, when after several centuries men painted on the clay. It continued to supply vases for domestic uses.[1] It must have been particularly active in western Greece, where men only commenced very late to employ painted pottery. But even in centres like Athens and corinth, it has always been represented, at least by such vases as the amphora and the pithos, which

were intended to contain oil, wine, and sometimes the remains of the dead (Fig. 36). Those vases often reappear as well as a decoration executed with the point or stamped with a roller; but we shall give to it but a limited place in our researches. The painted vase alone is a work of art.

Note 1.p.155. Athen. Mitt. 1893. p. 139-140. The same pottery is found at Eleusis in a tomb with pointed vases, that like those of Salamis, form the transition between the Mycenaean style and the geometrical rectilinear style.

For a long time the archaeologists had eyes only for the beautiful works of the ceramists of the 5 th and 4 th centuries; about 25 years since they began to distinguish certain vases, that although from differen sources, appeared to them to present enough traits in common to form the most ancient of the groups, that had to be studied by the historian of Grecian ceramics.[2] That place was assigned to them because of the character presented by their ornamentation. Those vases were all executed on the wheel with clay skilfully prepared. The forms a are varied, with construction already skilful and often happy; but on many of those pieces all ornament is what is termed geometrical. It is only formed by combinations of lines, especially of straight lines, that run parallel to each other or meet and intersect at different angles; not an image of a plant or animal, not a motive that even distantly recalls the world of life. The artist seems to ignore this world; one would say that he had never known only the abstract form, such as he drew it, in the minerals that crystallize, the chemical affinities, particularly such as the mathematician presents in the tracing of his figures. Among the vases of careful execution, but few have thus abstained from making any allusion to the existance of organized beings; but these are those that it is proper to select as types of this very peculiar style, because the system has been applied to it in all its vigor (Fig. 37).

Note 2.p.155. The merit of having after 1870 first called attention to that class of vases, and for having formed a separate class of them, belongs to Al. Conze (Zur Geschichte der Anfänge Griechischer Kunst with 11 plates, in the Sitzungsberichte of the Academy of Vienna, Phil.hist., Classe. Vol. LXIV. p. 505-538). Conze had the merit in an entirely new matter, of a seeing correctly at first step. In a second Memoir, he replied

to serious objections, that had been made to it, especially by Lindenschmidt. (Sitz. Vol. LXXIII. p. 221-250). Conze found a more competent opponent in Helbig. (Asservazioni etc. 1875. p. 221-253); he replied without abandoning his thesis, but softening what he had stated too absolutely, and defining the terms with more precision. (Oggetti, etc., Letters of A. Conze to W. Helbig. Annali. 1877. p. 384-397).

The decorator could not adhere long to that too narrow and paradoxical method. However ingenious he was, he never derived from linear ornament but a small number of distinct arrangements. How did he resist the timptation to remedy that poverty by seeking elsewhere what was not given to him by the play and confusion of all those curves and straight lines? Mixed wi with those abstractions, the least bit of reality assumed by contrast a singular value; it broke the monotony of this decoration, that became heavy and complicated without ever succeeding in being animated.

If life thus reconquered its rights, this is at first timidly and almost silently. There is a certain vase on which it is represented only by one or two paintings of very small images of aquatic birds or of goats (Fig. 38). Elsewhere one sees those images already assume more importance, either in themselves or by the place assigned to them. Swans and ibexes form files that fill one of the bands on the body (Fig. 39), or indeed one sees appear there other animals, that require more space, like the horse (Fig. 40). There are also objects where the geometrical design seems to be simplified to further serve only to surround the spaces on which more at their ease the bird and the horse (Fig. 41) or the goat and the bird. What all those vases otherwise have in common, whatever the figures scattered over them with the brush, is that these are not engaged in an action, that could interest the mind. These are there only to amuse the mind, like the concentric circles and the frets; they are merely ornamental.

Finally, we come to works on which the two series of motives existing on vases of the second species have attained their full development. The combinations of lines always retain the same place there. Due to the precision of drawing, they offer all t the pleasure that this system of decoration comprises, where it is mos skilfully conceived, but at the same time the images

that are enclosed in the compartments reserved begin to take an entirely different character. Even the animal is more than accessory. The human figure appears in the first place, it is multiplied; it shows itself under different aspects in scenes, such as representations of funeral ceremonies and of combats on land or sea (Fig. 42).

It seems that in Attica the painter made this decisive step. Nearly all the vases of the geometrical style with figures were found in tha country, some of them at Egina, Eleusis, and in the suburbs of Athens, mostly at Athens itself in the cemetery of the outer Ceramicos adjoining the gate called the Dipylon (double gate). These vases are indeed the product of Attic industry. Why should one suppose that they were brought by commerce from outside? One cannot allege the slightest indication to support that hypothesis. Where is to be sought the centre of production? How is it to be explained that this place, from which come such a great quantity of vases stamped with the seal of a very particular taste, should not have retained in its cemeteries some examples of its own manufacture. The supposition is the more improbable, since the soil of Attica furnishes an excellent clay. What proves that the quality of the earth there very early gave rise to the industry of the potter is, that even this name of ceramicos, that an urban district seems to have borne in all times; it signifies "the quarter of the potters." Finally some of these vases have a height that even excludes the idea of importation. I mean those that stood over the tombs, where they performed the purpose of steles (Fig. 42). The workman could give them those dimensions and weight only because he knew tha he had only to transport them to a sepulchre quite near his workshop. Placed on a broad plank, those enormous articles were adapted to pass without accident over a small dis ance; but the difficulties would have been almost innumerable, if it had been necessary for them to make a long journey by land o by sea.

It is true that one of the most careful works o this fabrication, the vase of Ormidia, came from a Cypriote necropolis, and there have been collected in the Peleponessus and even in Sicily some fragments of the same pottery, this is because that after this epoch the workshops of Athens labored for export.[1] Outside of Athens, this pottery is only found in isolated examples

in countries very distant from each other. If Beotia also fabricated numerous vhses with figures, one feels in them the imitation of types created by the potters of Athens.

Note 1.p.160. Histoire de l'Art. Vol. III, p. 702-703 and Fig. 514.

With the vases of the Dipylon the evolution of the geometrical style reached its limit. From the moment that the image of man entered the field of the vase, it could not fail soon to invade it entirely, or at least to make itself the best part t there. Occupying more space, it is enlarged; it will be more at ease for varying its attitudes, and to express more feelings and ideas, due to the diversity of subjects. To that was especially devoted the efforts of the painter, and the linear ornament, which was at first the principal thing, no longer served bu to decorate the parts of the field that the figure was willing to abandon.

If there be a clearly defined group, it is then that forming the painted vases reproduced above and those resembling them; but what place do these vases occupy in the long series of the creations of Grecian genius, and what is their relative age? That is the question proposed at the beginning of this study; it is necessary to reply to it.

When men commenced to call attention to these monuments, Mycenaean civilization had not yet risen from the earth. They had no information on the prehellenic period, they knew nothing of the ceramics, whose products were preserved in the tombs of Mycenae and of Ialysos, or their fragments strew the soil of the Cyclopean enclosures. In those conditions, it was natural for them to commence by attributing to the vases of geomertical design the highest antiquity, that the mind could t then conceive.

On the morrow of the excavations of Schliemann, the point of view had changed; science found itself in presence of creations of ceramics unknown till that day. Which were most ancient, the vases with geometrical decoration or those characterized by the use of a decoration, that demanded its favorite motives from t the imitation of plants and sea animals? They would have been much embarrassed to decide the question of priority, if they had been compelled to base their judgment only on the direct c comparison of the monuments. Assume a critic, that for both

kinds canno know where and in what company they were collected; hesitation will be allowed to him. Placed near the vases just represented, the vases termed Mycenaean would seem to bear the marks of a more advanced art. What removes all uncertainty are the circumstances themselves of the discovery. Nothing is better established than the civil condition of the vases which have as ornaments branches of flowers, the ivy and the algae, the octopus and the nautilus; they are legacies from the societies that lived in an age, that separates from historic times that series of migrations and conquests, which tradition calls the return of the Heraclides and the Dorian invasion. As for the vases where the ornament is entirely linear, they are not found mixed with the reliefs of that first age; there is no remains of them in either the ditches of the Mycenaean acropolis, at Vafio, Spata and Menidi, or at Salysos. In the citadel at Mycenae, hardly a few pieces have been collected on the surface of the ground. The only point where those fragments appear in number is the site of the palace; but there only in a layer composed of the ruins of that edifice have they been collected; among the rubbish of the huts built over its ruins, perhaps long after the destruction of the royal residence. It is the same in the lower city, one has found lessons of that sort neither in the domed tombs, nor in those excavated in the rock; on the other hand, they have been not rare in the rubbish obstructing the entrances of all those sepulchres. Those appear to have been violated for the most part even in antiquity, doubtless when the Dorians were established at Argos, and the decadence of Mycenai had commenced. Then were mixed with the earth removed by the hands of pillagers the fragments of vases, that tended to replace the ancient pottery, whose fabrication was going to end.[1]

Note 1.p.162. Tsoundos. Mycenai. p. 237. Letter of Feb. 15. 1891. "I have found," Tsoundos wrote me, "many fragments of the geometrical style thrown as by chance into a ravine north of the city, below the ruins of an edifice"(Steffen, sheet 1, at the left of the torrent Asprochomo, point 170, where is inscribed the indication "Antike Stutzmauer); "I also found two entire vasesof the same species in a ditch near the gate of the Lions. This was a very simple tomb, without walls or covering, a and the bones of the dead had not passed through the flame."

If one seeks a criterion that permits more precision, it is found in metal. With the Mycenaean vases one finds only bronze besides the precious metals; but arms of iron are furnished by the tombs of the Ceramicos of Athens, to which are due the largest and most beautiful of the vases with geometrical decoration.[2] Now iron does not appear, and still it was entirely a rarity toward the end of the Mycenaean period. At the time when originated the songs that entered into the composition of t the Iliad and the Odyssey, it is still not much less general t than bronze; it neither supplies the warrior with his cuirass, his sword, or the point of his spear. The vases with which we are here occupied, contemporaneous with the use of iron, are then later than the vases fashioned by the potters of the age of bronze.

Note 2.p.162. Rayet and Collignon, Histoire de la ceramique grecque, p. 23-24. Dümmler, Zur Nekropole am Dipylon. (Athen. Mitt. 1888. p. 287-300.). Brückner and Pernice. (Ein Attischer Friedhof. p. 139-140).

If to entirely justify this assertion other proofs are required, one can add that the vases with geometrical decoration are connected by insensible gradations to those called proto-Attic, proto-Beotian, proto-Corinthian, which themselves have intimate connections with the vases with black figures of the 6 th century, that are dated within a few years by the inscriptions traced on them and the subjects represented. It is the same for the Mycenaean ceramics. What replaces is connected with its predecessor only by very loose bonds; those threads are so thin that men have had some trouble to perceive them, which caused to be thought that there was in Greece at a certain time an abrupt and almost complete interruption of industrial activity. If that hypothesis must only be admitted under reserves that are indicated, it is no less established, that even by the fact that it has been able to seem probable, the art from which was derived the ceramics of Mycene, was rejected in a very distant past.

It is natural to suppose that the most ancient of the vases of the so-called geometrical style are those on which there a are only intersections and combinations of lines, with no or nearly no allusion to the world of life; it seems logical also to see in the appearance of the figures an advance, or at least

desire to advance, and to regard as more recent than the others, those monuments where figures ente into the composition of a scenes, whose sense may be seized in spite of the awkwardness of the drawing. On that account, these are the great vases found in the cemeteries of Athens and of Eleusis, which form the last terms of this series; but while admitting the extreme probability of this hypothesis, it is important to state, that in the same tombs on which were set the amphoras and crateras for personages, one finds pieces of smaller dimensions, that have no ornament other than linear. (Fig. 43).

Yet there is one trait by which is emp asized the close relation that connects the vases of the Dipylon with those on which the ornament was not allowed the insertion of the figure. This trait is the instinct of rhythm, a rhythm that recalls that of architecture. On the pieces where there are no images, as on those where images assume most importance, the entire visible surface is divided into several spaces by bands of deep black, that toward the bottom and top of the body are reinforced by a row of thiangles or sawteeth. (Fig. 44). The horizontal bands thus created in their turn are divided by vertical bars into panels, that recall the metopes of the Doric frieze. In t the interior of each of those spaces, is a motive, that occupies its middle. This is a cross surrounded by concentric circles (Figs. 37, 45), a fylfot (Fig. 52), or four leaves arranged in form of a cross (Figs. 46, 50); also a lozenge, within four triangles. (Figs. 47, 51). Elsewhere is a bird (Fig. 41), a horse (Fig. 40), or two horses facing each other (Fig. 49). Finally, where the human figure plays an important part, these spaces are larger. The images there are always enclosed in the same fashion; but they occupy all or nearly all of a band. The chariot races and files of ships extend around the vase without the vase without interruption, toward the bottom of the body; the upper part of that is devided by the strong projection of the ears into two panels in which is displayed the pomp of the obsequies. In the principal scene the bed on which the dead rests is placed on a chariot, forms the centre of the scene and dominates the personages ranged around it. Those are all of the same height and in the same attitude; they are in the same number on each side of the catafalque. Everywhere prevails an exact symmetry. (Fig. 42). The same tendency is manifested in

the skilfully managed contrast, on the one hand between the li lights on which the figures are detached, and on the other the dark zones that cover the entire foot of the vase, as well as the ample fret that ornaments the border of the cratera or the neck of the amphora. There is pursued a very thoughtful method; whatever the composition, the painter no longer has much to l learn. If that painter already has a correct idea of the conditions of the art, which causes his work to retain in the entirety an entirely primitive character, that is the character of his design. The painter depends on the potter. The latter employs a clay with grain as fine as in the most careful Mycenaean vases. His vases are of a yellow tone, more or less rosy, on which is vigorously prominen the black of the painting. The forms are less numerous than those of the Mycenaean epoch; they comprise the cratera and the amphora as recipients of great capacity, the oenochoe as a vase for pouring, the skyphos as one for drinking, and the pyxis as a jewel case. When one compares these to the Mycenaean ceramics, he feels himself in the presence of a different esthetics. Certain forms entirely disappear, like the tall vase with long and slender foot,[1] the elegant "aiguire" with round lip,[2] the vase for the saddle,[3] and the horn for drinking.[4] The rounded, short and squat shapes of the Egean potteries give place to larger and more massive vases, in which the straight and cylindrical construction dominates. The Mycenaean hydria and oenochoe have short necks, wi wide shoulders and round sides.[5] The hydria and oenochoe of t the geometrical style have the neck very long in form of a long tube, scarcely any shoulder and straight sides. Mycenaean vases are generally of moderate dimensions, that make them easily h handled. Here one finds himself in presence of vases much larger and difficult to move. They sometimes become colossal.[1] "Of two amphoras of the museum of Athens, one has a height of 5.25 ft. and the other of 5.91 ft. To shape and burn pieces of such height required rare mastery in the workman. One of the peculiarities that distinguishes the amphoras and crateras is the original arrangement of the ears (Fig. 49); they take the form of a pair of horns, that are reversed and curve toward the ground, like those of the ram. (Catalogue no. 517).

Note 1.p.164. We must thank M. Čollignon for the courtesy with which he has placed at our disposal the drawings executed by

him, when he prepared his Catalogue des vases peintes du musee de la societe archaeologique d'Athenes. (Paris. 1886. In Bibliotheques des ecoles francaises de Rome et Athens, part 3.).

Note 1.p.166. Histoire de l'Art. Vol. VI. Fig. 492.

Note 2.p.166. The same. Fig. 486.

Note 3.p.166. The same. Fig. 487.

Note 4.p.166. The same. Fig. 473.

Note 5.p.166. The same. Figs. 436,454,466,479,483 etc.

Note 1.p.167. E. Pottier. Musee de Louvre. catalogue des vases antiques de terre cuite. Part. 1. p.214-212.

Compared to his predecessors, the potter is then rather in advance of them; but one cannot say as much for the painter. At least on the vases by which the series is closed, there are ambitions unknown to his predecessors, none of them had yet attempted to represent such simple scenes as those decorating the enormous vases made at Athens for to be placed on tombs. By the boldness of that attempt and by the happy harmony of the general arrangement, the painter of the Dipylon announces the future; but his execution does not correspond to the conception. Very firm where it only consists of that play of lines which interests the eye, it becomes childish and almost barbaric where the painter undertakes to imitate living forms. There is then to be distinguished in the work of his brush, the purely linear design and that of the figure, the motives of the first are more or less developed, and are formed on all the vases without exception, that compose this series; on the contrary, the figure only appears on certain of these vases. Alone because it introduces in the work of the artist the image of man, the image expressive among all, it is more interesting in this decoration; but it does not remain less established, that when this style was constituted, if did not use the figure, and it always knew how to do without it; it is wanting on many vases found in the tombs of the Dipylon and contemporaneous with those in which it holds more place. Likewise where it appears to have more importance, the figure then always retains in this style the c character of an adventitious and belated element.

No description can define all the motives comprised on this type of linear ornament. Thisi motives are first the horizontal bands anf vertical bars connecting them, bands and bars that supply the principal lines of the decorations, that are as its

framework and skeleton. In the bands and in the spaces so enclosed, the brush is anxious to leave no vacancies, and has thrown a very dense filling of dotted lines, oblique hatchings, chevrons, zigzag braids, simple or cut triangles, also those with opposed vertexes, lozenges, chessboard squares, and simple or bent crosses. The fret is one of the motives for which the artist has the most marked liking. Sometimes the fre develops entirely around the circumference of the neck or of the foot. (Figs. 42, 50); some traces in one of the panels of the body it appears only in a fragmentary state (Fig. 38). Its esign is sometimes very simple, as it will remain in classical art; elsewhere it presents projections that make its outline complex. (Fig. 51). One will note the frequent use of the fylfot cross made by the decorator (Figs. 40, 42, 52). One asks in that case, what is the origin and meaning of this motive? Is it merely derived from the fret, a fret cut into two parts, that have been brought together? Is it a symbol, that is merely a double of the wheel, which like that represents the sun in its daily movement in its progress through space?[1] What causes me to incline to the first explanation is, that one also sometimes finds on these vases and employed in the same manner as the fylfot, another motive, which with its 16 branches is evidently only a v variant of the fret (Fig. 44). On the other the fylfot, which is unknown in the neolithic epoch, is neither found in Egypt, Chaldea, Assyria, nor in Phoenicia, while one sees it appear at Hissarlik on a lead statue and especially on the spinning disks. It is lacking on Mycenaean pottery, but at about the time that the Greek potter lavished it on his vases, its use is common to the prehistoric peoples of north Italy, the valley of the Danube and Scandinavia. Greeks and Romans will receive it in the heritage from theeir distant ancestors, with them it is found on the monuments, where according to the place it occupies and the accompanying inscription, it seems to be only a mere ornament. Finally, it is certain that in India and in the extreme Orient, among the Buddhists, under the name of swastika it has a religious signification. The problem is proposed; we do not charge ourselves with its solution.

Note 1.p.169. This is the solution reached by Goblet d'Alviella in the study devoted to the fylfot. (Le Migration de symbols. 1891. Chap. 2). It has been proposed to see in the fylfot o r

reduction of one of the motives dear to Mycenaean art, of the figure of a nautilus with four arms. (Houssay. Les theories de la genese a Mycenes. p. 24, in Revue archaeologique. 1895.[1] The difficulty is that the nautilus is represented with four arms; it is also that the geometrical style did not borrow its motives from the Mycenaean style, and is not a degeneration from that.

All the motives just cited are rectilinear. The curves that dominate in Mycenaean decoration play only a secondary part h here. There is a certain piece where the field has no decoration other than large concentric circles (Fig. 53). On other vases, circles of very small diameter with centres indicated by a point are joined together by tangent curves (Figs. 39, 50); thus one obtains a continuous motive, whose appearance recalls that of the ornament known under the name of continued scrolls. Large circles are found exceptionally on vases, where the human figure appears near that of the horse (Fig. 54); but these are sought in vain on the amphoras and crateras of the Dipylon. There the circle no longer appears as an independent motive; if it still appears sometimes, this is only to fill the middle of the panel; combined with the close web of that compact design, it does not attract the eye (Fig. 45). Besides the circle, when the geometrical style has reached its full development, it scarcely admits the curved line except in two motives, to which it accords but a moderate importance. One of these is a very elongated oval, that serves as a sort of rosette with 4, 6 or 8 branches; (Fig. 47); by indefinite repetition it also forms a sort of collar, that sometimes surrounds the body and sometimes the foot of the vase (Fig. 55). The other motive is a reversed curve, whose turns imitate those of a worm crawling on the ground (Fig. 51). It serves to fill certain light zones, that the painter has made a law to never leave void.

This spiral of very poor appearance is here the sole remains of those spirals with capricious scrolls, that occupy so much space in the Mycenaean decoration. It has been asked, whether it is not necessary to seek in this curvilinear zigzag the origin of the fret. To obtain the fret it indeed suffices to change into straight lines the regular curves of this spiral; to thus one substitutes a series of right angles for the rounds of those alternating bands. Is this actually the procedure follow-

followed by the ornamentist? The works of the basket-maker, we weaver and embroiderer present examples of the fret in more t than one country, where the system of motives of which it forms a part do not seem to have been preceded by another with a different principle. The hypothesis further has nothing in contradiction with the spirit of the style, whose own character is its very pronounced tendency to stiffen all lines, to give them nowhere the supple flexures, that they present in the world of life. This tendency must manifest itself even where the designer exceptionally adopts something else than straight lines. We have mentioned a motive whose contour offers some analogy to that of a leaf (Fig. 55); but how distant is that analogy! On the Mycenaean vases the leaves are attached to their peduncles and are frequently connected by these to the branch that bears them, and are unequal and tend in different directions, as on the plant. Likewise one divines there behind the rosette the flower that furnished its model. Here is nothing similar; the circular segments that form the points of these stars have an absolute regularity; one would say that they were drawn with compasses.

To practice that kind of design, the hand of the painter contracted habits, that continued for a long time to control its movements. Even when the ceramist of the Dipylon has placed m most of his personages, linear ornament always retains its predominance. Not only does it occupy more space and serve as a frame for the figure, but also that submits to its influence. See this vase that represents two horses facing each other; (Fig. 48); the bodies of the horses are represented by two wide bars parallel to the line of the ground; this is indeed the work of a brush trained in the school of geometrical drawing. The deformation is again more sensible in the human figure. No liberty and no diversity. For all the figures engaged in the same action is the attitude identical. The arms are raised and bent everywhere at the same angles (Fig. 42). The one personage and another, the legs are much too long and are exactly parallel; but especially the torso has a characteristic design. This has the appearance of an inserted triangle, that has for its base the breadth of the shoulders, and as apex the reduction of the waist, here contracted beyond measure. A stick takes the place of the neck and bears the head, that resembles the head

of a bird and on it is represented a great round eye; that head is sometimes surmounted by . tuft of hair. There is a feeling for nature only in the drawing of the lower part of the body. While the arms are nearly rigid bars, one distinguishes neither the elbow nor the wrist, the roundness of the thighs and of the calves is frankly indicated, a peculiarity that allows to be foreseen the insistance with which among this people, archaic sculpture in its first attempts will emphasize these same projections of the muscular mass (Figs. 58, 59). This is striking if one compares with the most ancient statues the image of the dead lying on his state bed in several paintings from the Dipylon; it is at a larger scale than the images of the living, that surround the catafalque, which has permitted giving greater emphasis to certain details (Fig. 56).

This trait is the only one in the painter, that evidences a glance cast at the living model. Excepting that the treatment of the figure is schematic; the ceramist only desired to recall to the mind the object seen; his ambition was not to attempt to present a faithful copy of it. See the persons grouped around the corpse. All that the painter proposes is to define well the function of those personages. He attains that result by t the movement given to the arms. These are merely lines of uniform width everywhere, that outline trapezoids above the most ungraceful busts; but the spectator being familiar with those scenes of mourning, has no trouble to understand what they are doing. Both hands meet near the top of the head and are occupied in tearing the hair, no error in the meaning is possible. Likewise for the sex; when it is marked for the women, this is by the indication of the breasts. On most figures these are r represented by two points projecting on the bust, one at the right and the other at the left (Fig. 6); but elsewhere has b been taken, even a more awkward method. The two breasts are placed on the same side, one above the other (Fig. 5, the woman at the top and on the right). Provided that he has shown both of those organs, the designer believes that he has done his d duty. As for the man, when he distinguishes them from women, he does this by the dagger attached to the belt or by the long s shield with two notches in the sides, beneath which he conceals the body; the sexual parts are but exceptionally indicated on the vases, that appear to form the close of the series (Figs.

57, 66). The head is sometimes covered by a helmet with a long crest (Fig. 59).

In most of these paintings, neither on the men nor on the wo women is a trace of clothing, and yet it is improbable that at Athens the relatives of the dead were nude at the funeral rites; no text makes the least allusion to such a custom. By a method of simplification is explained that suppression, the designer judged useless the effort, that would have been imposed on him to show the clothing. All that he proposed to himself was to cause to be understood, that around the corpse were men and women, who took the part that custom assigned to them in the performance of the mortuary rites; the indication of the breasts and of the weapons sufficed for this with that of the movements.

What completes the pr of that the Athenian women and men did not then go entirely nude through the city, as the negroes did in the tropics, as a dancing chorus represented on another vase of the same fabrication (Fig. 59). Men and women hold each other's hands and form a circle. Here it is still by the sword supported from the belt, that the men are recognized, and who seem nude; but what defines the women are not the breasts, assumed to be covered by the dress, a sort of checked skirt, that falls from the waist to the feet and conceals them. This costume is that worn by the women in the paintings, the ivories a and intaglios of Mycenae. One does not find here that arrangement like a belt and those superposed floating draperies, that give the robe such a singular appearance on those monuments. What are different are the interpretation and the rendering.

To give a reason for the apparent nudity of the personages, it has been desired to resort to the hypothesis of the imitation of a foreign model. In these figures with breasts uncovered and pendant has been sought a memory of the images of women traced by Egyptian art.[1] That scarcely represents her as nude; but under the transparent fabrics covering it is permitted to appear the relief of the bosom and all the lines of the slender and delicate figure.[2] To discard that conjecture, it suffices to compare the pretended model with said to be a copy of it. Convention is not the same in Egypt and in Greece. The figure being frankly seen from the side, the artist shows bu one of the breasts, that is profiled on the contour of the chest. On

On one vase the torso presents itself in front, flanked by two breasts. That is an entirely different system. If when the painters of the Dipylon created their type of women, there had been under their eyes the Egyptian type, they would not have wandered so far from it, naive as they were. They would have been incapable of reproducing the elegance, but would have applied themselves to retain the general arrangement in even their awkward sketches; we should find the fundamental data of the exotic type, although spoiled and made heavier.

Note 1.p.175. Kroker. Die Dipylonvasen. p.105-106. (Jahrb. des K. und D. arch. Institute. Vol. I. 1886).

Note 2.p.175. Histoire de l'Art. Vol. I. Pl. XII and Figs. 99, 488, 524.

Note 1.p.176. Furtwängler like us explains this app[illegible] of nudity. (Archaeol. Zeitung. 1885. p. 136).

If one desires the authors of these paintings to be inspired by the forms and conventions created by an earlier sculpture, it is unnecessary to seek in Egypt the models that had that influence. What most resemble the figures drawn on these vases are the statuettes of limestone and of marble, that the inhabitants of the islands of the Egean sea deposited in their tombs in the course of the primitive age;[2] there are also golden plaques found at Mycenae, which represent a nude woman, on whose head are placed doves.[3] From the 10 th to the 8 th centuries, the images that served for domestic worship must differ sensibly from those in use during the preceding period. Now if one compares these figures to the images of the pottery, he finds that the analogy does not rest on the fact of the appearance of nudity; it likewise depends on many peculiarities that characterize the mode of presentation. Thus in the paintings as in the plaques of Mycenae, the chest and the abdomen are shown in front, while the legs and head are in profile. The legs are parallel to each other; the feet both equally support the weight of the body. Whether these models are in stone or metal, the face in all has that appearance of the head of a bird, that it presents on the vases, an appearance due to the exaggeration of the projection of the nose; that makes a very acute angle with the forehead and the mouth. Also on all a great round eye occupies the middle of the circle or irregular oval to which is attached that sort of beak. If the ceramist of the Dipylon had

under his eyes images of that sort, one understands what he remembered of them, when he commenced to mingle the human figure with his geometrical decoration.[4]

Note 2.p.178. Histoire de l'Art. Vol. VI. Chap. 8. Sect. 2.

Note 3.p.178. The same. Figs. 283, 284.

Note 4.p.178. Helbig. L'epopee homerique. p.47, 48.

The conventions of perspective are here those that we have already observed in the works of other primitive arts. The designer everywhere superposes some of the persons, that he desires to be seen placed as beside or behind the others on the same horizontal plane. One will obtain a complete account of t the procedure if he studies the arrangement of the scene that represents the exposition of the corpse (Fig. 56). This is extended on the state bed. See how the workman has proceeded to indicate that the relatives are grouped at the four sides of t the couch. Those present are regarded as standing in front along one side of the bed, he has placed below the verticals. At the two ends of the line thefigures are smaller in dimensions; if they are so reduced, this is to leave to the painter the so space needed for two persons, one at the head and the other at the foot of the bed. Finally, over the bed is another series of figures; all those seated on stools. No indication denotes their sex; but one is tempted to believe that this group is that of the women of the family, who sing and resume at intervals the chant of mourning. Their post was behind the bed. The checked tapestry that covers the bed seems held vertical like hangings fixed vertically against the wall. The dead must have been laid on his back; he shows his two legs and two arms, as if he rested on the left side. It is the same where the cars are represented. An open balustrade at the two sides borders the narrow plank on which the driver stood.It would have been too great an effort to seek to show the lower part of the legs through the openings of the lattice. They preferred to raise the figure by the height of the railing; it was then so placed that the feet of the personage would seem to rest on the railing of the balustrade (Fig. 7). In many of these cars the wheels are not connected with the cart of the carriage; anspace separates them. (Figs. 6, 7). Some seated persons have only one leg; the other is omitted, that is supposed to be covered and concealed by the one presented to the view of the spectator.(Fig. 56).

However imperfect was such a method of drawing, these painters no less succeeded in placing in their picture more variety, than one would have expected from an art that had such weak me means at command. The representation of the obsequies with the two successive acts into which is divided this drama of grief, already comprises very varied attitudes and movements. Besides the scenes that we have indicated, and which are again found on all the great vases with a funerary purpose, on some of them o one meets with groups, that the workman presumed to add to those of his ordinary programme. Here is a woman holding a child by the hand and leading it to a mortuary couch, as if to cause it to see the face of its father for the last time. (Fig. 6). There is seated a woman holding a child on her knees; she only is associated by here presence with the mourning of the family. (Fig. 60). In the line of cars the drivers of the cars most commonly have their war equipment; the body is concealed by a great shield with notches in the sides (Fig. 7). Otherwise they seem nude, and do not even have the dagger at the belt. Sometimes there is an alternation of these two types.[1]

Note 1.p.178. Annoll. 1872. Plote I - 1.

The life of seamen with its hazards and its adventures has furnished the ceramist with another se ies of themes; he has often represented ships under way and driven forward by the strained arms of the rowers, (Fig. 49), ships fighting with each other, ships with decks cove ed by the dead, while the sea rolls around them corpses which the fish prepare to devour. (F (Fig. 61). These maritime scenes have their places on the enormous vases set over the tombs. Among the fragments possessed by the Louvre, and where are drawn vessels under way, there are many tha by the thickness of the clay show themselves to have made parts of those great pieces with a funerary destination. They represented vessels as they figured cars, to replace here the dead in the conditions of his mortal life, as a skilful d driver of horses and a bold sailor. Member or chief of a naucrasia, he was distinguished by commanding one of the coast guards, as we would say, that policed the coasts and ports of Attica, who protected them from the incursions of pirates from Phoenicia or the islands of the Archipelago.

To a different category belongs the sole vase, nearly complete and decorated by an episode from this chapter of the reper-

repertory. This refers t a pitcher, whose truly elegant form seems boorowed from a metal vessel. (Fig. 62). The scene here extends entirely around the body. What the painter desired to represent is an attempt to land, perhaps the disembarkation of pirates, that repulse the inhabitants of the country so menaced (Fig. 63). No line marks the separation of the land and sea; but there are warriors at right and left of the ship, which assumes it engaged in a creek or the bed of a river. The steersman has his hand on the wide oar and performs the office of a rudder; he endeavors to turn the ship so as to facilitate the defense or to prepare for flight. The two soldiers that represent the crew are in a dangerous situation; they seek to face all sides with the sword, spear and bow; around the galley the wounded are seen to stagger and fall.[1]

Note 1.p.179. Furtwängler. Griechische Vases der sogenannte geometrische Styls. (Arch. Zeit. 1885. p. 132-134). On the images of ships and of maritime scenes found in the paintings of the vases of the Dipylon, also see Cartault. De quelques representations de navires empruntees a des vases primitifs provenant d'Athenes. (Monuments grecs publies par l'Association pour l'encouragement des etudes grecques. 1882-1884. p. 33-57. Plate IV); Pernice. Ueber die Schiffsbilder auf den Dipylonvasen. (Athen. Mitt. 1892. p. 285-306). Cecil Torr. Les navires sur les vases du dipylon. (Revue archaeologique. 1894. p. 14- 27) The next volume of Memoires de l'Academie de Inscriptions will contain a study, that M. Helbig has devoted to the same subject under the title:-- Les navires sur les vases du Dipylon et les naucraries.

If on this vase the principal scene is interesting by the complexity of the scene that it traces, the accessory parts of the decoration present details no less singular. Around the neck is a man between two horses that he holds by halters; the execution is here more careful than that where this group alone breaks the monotony of the geometrical decoration (Fig. 48). The man has a dagger at the belt, and on his head is a helmet, whose plume falls behind. On his shoulder is a motive frequently found with the ceramists of the archaic age;[1] It is the chase of a hare by coursing dogs. (Fig. 54).

Note 1.p.180. Arch. Zeit. 1881. p. 33 et seq.; 1883, p. 155, 161.

Another favorite theme of the painters of the Dipylon is the representation of a darcing chorus (Fig. 59). It is found with many curious developments on a vase of Athenian origin, in which even the form of the piece and the boldness of the curves of the ears permit one to recognize one of the more recent products of that fabrication (Fig. 65). The decoration is divided into two bands. In the upper band and separated by quatrefoils, are only animals, aquatic birds, stags and hinds, whose attitudes present a variety and suppleness, that one is not accustomed to find on this pottery. The lower band forms a scene cut into two parts by the ears. In one half the band are only entirely nude men; the sexual parts are indicated. Two of those personages, each holding in the hand two spears and covered by a great shield, seem to execute a warlike dance, analogous to the Pyrrhic dance (Fig. 66). In another pair one divines pugilists preparing to strike each other. A musician turns his back to the athletes and makes resound his lyre with four strings; thus he regulates the movements of three dancers. One of these has sprung into the air, very high above the ground; he is the leaper mentioned by Homer. The two others have not left the earth; the entire weight of their bodies rests on the right feet. In the other part of the band, two men allow to hang between them a long garland of foliage; then is a singular combat, that must be an imaginary fight, one of the figures of the Pyrrhic dance, between two warriors armed with long swords. Further on is a second player on the lyre and two water carriers, doubtless two women, bearing pitchers on their heads, in their hands is the garland. The instrument marks the cadence of their steps, and they march thus in procession toward the sanctuary where they will sprinkle the lastral water. Finally, in this part of the scene is a singular motive, that seen in that place is not surprising; near the player of the lyre are two animals facing each other, who devour a man girded with a sword. We s shall have occasion to return to that detail.

This singular caprice of the painter does not deprive the observer of the general sense of the scene; that represents some local assemblage, one of the religious festivals of Attica, or in one of the adjacent provinces. The gymnastic games were comprised in the programme of the solemnity. Men found pleasure in representing these combats. A couple of pugilists ornament

the neck of a pitcher, that seems to have come from the same workshops as the vases of the Dipylon.[1]

Note 1.p.182. Gazette Archeologique. 1888. p. 180. and Plate 25. Louvre. Boll. A. 568.

Finally, a fragment of a great funerary vase offers in one of its bands the representation of a battle with the wounded, corpses being heaped or scattered over the ground. (Fig. 67). One will note the variety of the arms, helmets with long crests, and shields, some of which are rectangular and the others are oval with deep notches, the bow of bent wood. On the lower band is a file of warriors, on the march.

We believe that we have drawn up a nearly complete list of the themes, that formed the repertory of the ceramic painter, from the moment when the figure of the animal and soon afterwards that of the man had appeared on the ground of the vase. When the potter was thus emancipated, he did not use the brush alone to vary the appearance of his works; he also decorated them by images modeled in relief. Thus he took pleasure in placing on the flat or slightly rounded covers of certain large and low articles, such as boxes and those of a sort of tureen, groups od three or four little horses (Fig. 68). Also sometimes to ornament the cover and form the handle, he has placed a second vase of small dimensions and elongated form, instead of horses (Fig. 44). Here a serpent is modeled in relief and extends along the ear; its head rests on the top of the handles (Fig. 69). There the serpent undulates around the orifice.[1] When he takes this method, the potter imitates products, that are derived from another technics. These overlays are better suited to metal than to clay, or at least they are more naturally derived from metal. Soldering or a few rivets suffice to connect them to the body of a vase of gold or of bronze; such were found at Mycenae. Clay does not refuse to lend itself to arrangements of this kind; but it does not suggest them to the workman. The junction that he makes with slip between the surface or the ears of the vase and the applied objects modeled in high relief is never very solid.

In following the art of the ceramist in its evolution, we have reached works in which the technical skill displayed by the workman, the diversity of the procedures employed and of the scene represented, shows a rapid and decisive advance; one

feels the coming of the hour when the painter and his patrons, weary of the monotonous and labored play of lines, will be more interested in the image of man, whose attitudes and movements change with the situations in which circumstances place him, and with those where poetic fable treats him, the ideal transcription of real life. Yet we have not believed it necessary to separate the two kinds of vases that we have described. We have divided them into several groups; but all those groups have appeared to us to form only the same family, in spite of the peculiarities by which each of them is distinguished, and which are defined by the importance retained by linear ornament and by the persistence with which the same motives are repeated, from the paintings whose authors do not seem to have suspected the existence of organized beings and those that numerous persons people and animate by their life. Not only on those vases that one can regard as most advanced are always the fret and the other motives of the same kind, that furnish the spaces in which are these figures; but also these motives, entire or separated in parts, are scattered between the persons as if by chance, in the field that they encumber. The habit is so successful, that they end by employing in the same fashion the figures of animals, that the first succeeded in introducing as decorative elements in geometrical ornamentation. One understands the presence of fishes, and even that of aquatic birds in the scenes of naval battles; but what places those birds in the representation of funerals, where they are beneath the catafalque and between the legs of the horses (Fig. 6)? It is even more strange to see fishes under the bellies of the two horses, that a man holds by the halter (Fig. 48). Such practices define the character of this art in which the image of the living being always remains in some fashion subordinated to that geometrical element which preceded it.

What were the origins of this geometrical style? How and why was it substituted for the Mycenaean style? What was the secret of its triumph and of the long empire that it exercised?

It is impossible to see in the geometrical style a simple transformation of the Mycenaean style. How can one admit, that the ceramic painter at a given moment suddenly became indifferent to the beauty of life? From this spectacle of the organic world in which he had begun to interest himself, did he sudden-

suddenly turn away his eyes so as to further be pleased only by cold abstractions? He was accustomed to require especially from linear design broad bands, that extended like so many belts around the foot and body of the vase. That was usually decorated on only its upper part. When the workman did not place there the supple scrolls of his favorite spirals, he arranged on this field the shells and fishes that inhabited the waters of the Grecian seas, the algae that covered the rocks, the leaves and flowers of the country of Argolis, the animals in the midst of which he lived, and finally the man in the diversity of his occupations. Sometimes even with a sort of carelessness, he spread over all the surfaces left for him by the potter the flexible stems of the plant or the long rounded arms of the octopus and the nautilus. One scarcely has to believe that this artist of himself renounced those free charms to create this formal style, that with inflexible rigor subdivides into compartments the entire extent at its disposal, which it fills beyond measure, the style extends and is stiffened by the right line, which it causes to dominate everywhere, admitting the curved line only in a single form, that of the isolated circle or joined by tangents.[1]

Note 1.p.185. These differences the Mycenaean and the geometrical decoration have been well indicated by K. Mosner in the historical summary, that he placed at the head of his description of the ceramic museum in Vienna. (Die Sammlung antiker Vasen und Terracotten im K. K. oesterreichen Museum. Vienna. 1892).

In certain respects, there is an advance from Mycenaean ceramics to that succeeding it. In the latter is more developed order and rhythm; composition is there restricted to a symmetry that may seem excessive, but however where the work of reflection makes itself felt better than in the works of the earlier school. Yet there was a real loss when geometrical ornamentation was substituted everywhere for its predecessor. By the narrow system that it had adopted, are deprived itself of the resources supplied to the ornamentist by the imitation of the living form. This is an entire change of method, and a change too radical for one to see in it an organic evolution, the result of the effort of a mind in search of new means of expression. How was it produced?

As it has been believed, is geometrical design "the first revelation of the artistic sentiment, the first movement made by art after its awakening?"[2] It is permissible to doubt this. This mode of design is abstract, it assumes a certain degree of reflection. Before combining lines, like a child, man feels the temptation to attempt to copy what he sees. The true type of the primitive draftsman is that young man, as related by the ancients, who undertook to fix on a wall with a coal the shadow cast by the profile of his betrothed; it is the youthful Giotto doing likewise for the outline of an ass. When they traced those sketches, the Greek and the Florentine were nearer that first designer than was the artist of the Dipylon, when he arranged the complex equipment of his chevrons, checkers and frets. What proves this and confirms the deductions that can be derived from psychology, that drawing of the quaternary period, on those bones of the reindeer decorated by engravings, that are the most ancient monuments of sculpture, one finds no trace of linear decoration; on the contrary, what is found there in various attitudes is the figure of the concrete being, men, animals and plants.[1] Yet if not the first in date, linear decoration was born soon after imitative drawing by a sort of spontaneous generation among all peoples, from the first steps that they made in the paths of civilization. Nature even suggested the idea and supplied the elements. Certain rudimentary industries everywhere aroused the development and ensured its progress by the materials employed and by the procedures used to utilize them.

Note 2.p.185. Fröhner. La Verrerie antique. Description de la collection Charvet. p. 71.

Note 1.p.188. Conze has seen this very well, who in a recent memoir has studied anew the origins of the general style. (Ueber den Ursprung der bildenden Kunst, in the Sitzungsberichte of Academy of Berlin, Feb. 11, 1887).

We have so far taken our examples only from paintings on vases; but clay cannot be the sole material to which ornamentation was applied, and not even the ceramist invented it. Neither the geometrical style, nor any of the styles that we have to study was derived from clay.

There are materials, like metal or wood, that oppose a certain resistance to the tool and force, or rather induce the hand

to make certain movements rather than certain others. Doubtless in even this case one cannot state what was the material, that created the style. If it was thus, there was for each material only one system of decoration, which remained always nearly similar in the most different places and peoples. Now matters do not so proceed. A piece of Mycenaean jewelry is distinguished at first sight from a work of the 5 th century B. C or from one of the Renaissance. Yet when compared, all products of the arts of met.l present certain analogies. The designs are not all traced alike; but they have the same accent and a sort of family air. It is that at Mycenae, Athens and Florence, to cause ornaments in relief to project or to sink them, it was necessary to give the same blow to the hammer and chisel, to direct in the same fashion the point of the graver.

Clay does not have its preferences and requirements like wood or metal. Of all materials it is the most docile, or as better said, the most passive. In the moist state, it lends itself with absolute indifference to receive all forms and all impressions. When the fire has hardened it, it offers surfaces that are like blank pages on which the brush can apply the motives of the most different styles at the pleasure of the imagination. It is then elsewhere, in the industries that employ materials suggesting forms, that it is proper to seek the origin of the motives which ceramics has preserved. Now there are two elementary industries, whose procedures appear to furnish a plausible explanation of the character of the designs composing the repertory of the ornamentist, whose works we have described. Those industries are those of the weaver and of the basket-maker, as also that of the workman who raises or engraves metal to decorate its surface.

It suffices to have seen a trade at work, to have seen the shuttle slide within the warp, to understand that rectilinear motives are those best suited to the textile industry, those obtained without difficulty by the crossing of threads of many colors. Such are those that decorate the long robe in which is clothed the woman, that appears to be represented by a curious statuette discovered in 1771 by peasants in a tumulus on the right bank of the Danube (Fig. 70). In this respect has been recalled the "bassaris" that forms the national costume of the nomads of Thrace. What forms the particular interest of

this rude image is, that one sees there better than in the paintings of vases, what is given by the work of the trade among people little advanced, but which already hold to a certain search for decoration. The motives that here ornament the fabric areoblack and white squares, which alternate with chevrons and wolves' teeth. As for the firoles preserved on the back, those are metal pendants attached by little cords to the wide girdle around the waist. The weaver is obliged to be very ingenious, to struggle in a way with his apparatus in order to obtain curved motives; he only attains this late by means of already wise combinations. When the weaver made his apprenticeship, he already had before him models, that after his first attempts must have furnished him with the simplest motives. Before knowing how to carry on the trade of weaving, there had been made mats and baskets. There again the right or acute angles were made by manual skill that created the plait. The parallel bars and their intersections, the chevrons and lozenges arise of themselves under the fingers of the basket-maker, when he interweaves the stems of rushes or willows of different colors. Now what dominates in the ornamentation of our vases is the straight line an the varied combinations that it produces. It is then probable that the principal elements of this decoration were borrowed from designs, that the ceramist had under his eyes, scattered over the mats and rugs that covered the floor of his tent or his hut, on the baskets used by the women, and on the fabrics with which both sexes were clothed.[1]

Note 1.p.188. Certain of these ornaments may be from embroidery; but the taste did not change, whether the women used the needle or the shuttle. The designs that their needles added to the clothing were the same that they inserted in the cloth when they made hangings and rugs. The influence of the basket-maker must have exerted on the potter has been especially studied by Kekule. (Arch. Anzeiger, in Jahrb. 1890. p. 106-107). On the order in which must have appeared the various elements of linear decoration, see Milchhofer, Anfänge der Kunst. Note of p. 50.

On the other hand, on our vases among these rectangular ornaments that occupy most space, one sees the circle appear. It only plays a secondary part there; but i no less contributes to give to the style of the painters of the Difylon its peculiar stamp. Now neither from the mat, nor from the varie ies of the

fabric of wool or of linen came the circle. To explain the part derived from it, by the painter, is is necessary to refer to a different technics, to that of the industry of bone or of metal, that early played a considerable part in the life of the tribes by which were peopled Greece and the adjacent countries; these industries did not need a long time to find the motives, that they applied to the decoration of their works. The choice of those motives was dictated to them by the properties of the material ard by the use of the tool. Thus was formed a mode of ornamentation, which has characteristics sufficiently marked for one to recognize it in even the borrowings made from it by other trades.

This style adopts and utilizes most of these motives composed of rectilinear elements, that form the repertory of the basket-maker and weaver; there is no material on which the straight line cannot be inscribed; but in the decoration of cylinders and plaques of bone or of ivory, as in that of vases or other utensils of metal, besides rays or parallel bands, chevrons and frets, is seen to appear another element, to which the entirety must present an appearance different from that of the mat or rug. In the working of metal, the circle originates of itself in the course of the execution of the decoration. If it concerns repoussee work, one of the first ideas presenting itself to the mind of the artisan is to arrange on the external surface of the object bosses or little rounds, whose projection recalls the round of the breasts of woman; not a circle g gives in plan the contour of this boss. If one seeks the principle of the decoration in the use of overlays placed on the ground, the metal wire wound like a ball, gives spirals whose number will vary with the dimensions of the space to be filled. (Vignette at the end of Chapter V). Finally, if from engraving is demanded the whole or the complement of the decoration, in practice is more expeditious to scatter over the field designs in elegant symmetry, than to swing thereon one poin of the compasses, as done on the ivory plaques collected at Spata;[1] thus are obtained concentric circles or segments of circles, that give rise to very varied combinations; to deepen them the graver follows the slight lines indicated by the tool. Made supple and certain by long practice, the fingers of the workmen must further very often do without the compasses. I have seen

in the bazaar of the tailors at Cairo a designer with chalk fr freely trace on pieces of cloth to be embroidered then by the needle, curves of quite mathematical precision, although drawn freehand.

Note 1.p.189. Bull. de corr. hell. 1878. p. 207:- "The more numerous examples of rectogulor ploques are decorated by circles; they are traced with the compasses.

Thus three, the industries of braiding, fabrics and metal, then sufficed to supply the ceramic painter with nearly all the motives, that served him for decorating those vases in which t the ornament remains purely linear. To imitate the form of the plant, and especially to copy those of the animal and of the man is always a more difficult matter than to draw squares, lozenges anf circles. To copy life with the diversity of its types, each of which has its own expression, requires a very different effort of observation and of reflection. Where the arts of design are in their infancy, that effor is reserved f for those branches in which it seems imposed as necessary, by reason of the special role of certain objects. One is restricted for goldsmith's work that carries jewels, arms and cups for princes, or for sculpture that models the images of the gods; but for pottery that must be fabricated and furnished in great quantities, it was natural to adhere to the kind of decoration, that without putting the workmen to the trouble of invention, best len itself to the exigencies of rapid execution.[1] Thus for a very long time are explained the motives peculiar to the geometrical style, here and there relieved and e enhanced by some figures of birds and of quadrupeds, that formed all the cost of the decoration of clay vases. The ceramist found those motives elaborated in other technics; to profit by them, there sufficed him a sort of almost mechanical skill, that he acquired by practice.

Note 1.p.190. A. Riegel. Stilfragen. p. 30.

Yet there came a moment, when in a society that became richer and more refined, it was no longer possible for the painter to content himself with the a rangements furnished by purely linear decoration; men required him to inclose in these ornaments scenes taken from the lives of his contemporaries; but even t then in this new phase of the development of his style, a painter still felt the influences of the models by which he was

first inspired. Perhaps the figures that appear on the vases of the Dipylon were originally imitated from images, that about the same time the shuttle of the weaver had scattered in t the warp of fabrics of luxury, the primitive weaving only admitting rectilinear designs. What has suggested to me these conjectures are the ancient Peruvian fabrics. I see there animals and men whose type has suffered the same sort of deformation as on Attic vases, has been geometrized in the same fashion, if we may be permitted that barbarism. Thus the cat has taken a square head and a lozenge tail (Fig. 71); for men, in the drawing of the body and members are eveeywhere straight lines and acute angles (Fig. 72). The tombs of the Ceramicos of Athens have not preserved fabrics for us; but the cloths that enveloped the b bodies of the Eupatrids in the richest of those sepulchres were executed in a manner, that must have very strongly resembled that used by the subjects of the Incas, and have given rise to nearly the same arrangements. In the decoration of the vases that we have reproduced, there are no motives that do not find their application in the practices of two or three industries, the most indispensable of all, the rush-work, the weaving of wool and linen, the working of bone and of metal. It suffices then to render a reason for the peculiarities by which is defined the style of these vases, that the tribes that fashioned t them possessed the industries mentioned. On the other hand, if those tribes had artists capable of executing works such as the cups of Vaphio and the most beautiful of the intaglios accompanying them, the ornamentation of their ceramics did not present with its air of variety the character of poverty and of monotony, that we have mentioned; one will find there the trace of t that sentiment of life, that forms the originality of Mycenaean art. That sentiment is lacking; one is thus forced to admit t that the potters, who fabricated the vases with purely linear decoration were not the direct continuators of the potters of Mycenae and of Ialysos. This hypothesis does not remove all difficulties; but however it gives the sole plausible explanation of the contrast that strikes the historian. He knows himself to be henceforth in the presence of an art, that did not have the same origin as its predecessor, which was born in different surroundings, and which was imported into Greece by other tribes. It is to be sought among the tribes, that were

reputed to have concurred in forming the Greek nation, whether to some of them is there some reason to attribute that role of that initiative.

According to the idea that we have formed for ourselves of the history of the Grecian world, a great disturbance was produced about the 11 th century in all the southern part of the Hellenic peninsula. New inhabitants in the most fertile and most populous districts were substituted for the ancient ones, who were forced to emigrate toward the islands of the Egean sea and the coasts of Asia Minora If it be proved that a change of taste was caused in Greece in the arts of design at abouu that time, that a new style replaced that which had reigned as master during the course of the preceding centuries, this conclusion is imposed:- that this taste and this style must have been introduced into Greece by the rude and warlike tribes, which tradition groups under the generic name of Dorians.

These invaders are not pursued by Grecian historians beyond the mass of Mt. Pindus, which they must have reached by slipping among the long chains, that detach themselves from the central nucleus of the Alps, and which cover with their ramifications the ertire eastern peninsula of Europe, but in the silence of history there remains one resource, which is to apply to the monuments themselves to ask if they cannot aid us in going higher into the obscure past of those tribes, and to throw some light upon their origins and their ethnic affinities.

It is a fact that the archaeological researches of the last years have placed beyond doubt; in the valley of the Danube and in all southern Europe as well as on both slopes of the Alps, from the centre of Italy to the basins of the Rhine and the Rhone, one finds scattered everywhere in the tombs and among the ruins of very old market townr, the works of an industry, whose style recalls that of Grecian ceramics with linear decoration. The analogies are those that cannot be the result of a simple accident. In those monuments, whether of stone, of clay or metal, one finds nearly all the motives whose use characterizes those of the works of that ceramics, that can by good right pass for the most ancient.

The comparison would convince little, were it based only on the motives detached from the context and arbitraily isolated. To regard them thus, there would be little that one succeeds

in finding in the works of other peoples, some of whom do not appear to have been able at that time to influence Greece by their example, while others are separated from it by the entire breadth of the ocean. It is that it would be easy to prove, either by referring to the rare remains of the products of Assyrian and Phoenician ceramics,[1] that we have been able to discover, or by presenting some specimens of Mexican, Peruvian or Kabyle ceramics.[2] The true resemblance, that attesting the same origin, a relation of connection and dependance, is indeed much less in the similarity of the motives taken separately, thanin that of the order according to which they are grouped, in what way may be termed the syntax of ornament.

Note 1.p.193. Histoire de l'Art. Vol. II. Figs 273-279; Vol. III. Figs. 478, 479.

Note 2.p.193. Being unable to institute this comparison here, we refer to the labors of M. Holmes, who is the specialist most competent for the study of mexican ceramics. He is curator of a special department of ceramics at the National Museum in Washington. See the fourth annual report of the bureau of ethnology (Washington. 1886), the Memoir entitled Origin and development of form and ornament in ceramic art, particularly pages 459 and 484, and in the same volume another study; Pottery of the ancient pueblos.

The industry that we have in view, that it has been proposed to name Pelasgian, Celtic, Celto-Illyrian, persisted in Italy until there made itself felt on the coasts of that country the influence of Phoenicia, and particularly that of Greece. Without changing scarcely anything in its practices, it maintained itself in central and southern Europe until the Roman conquest. Not types absolutely similar, should one expect to succeed in finding, when he makes out the inventory of the multiple work of the tribes, that were dispersed over such great areas, when he compares objects between which there may be a distance of several centuries. learned men that have made this kind of antiquities their special study find differences therein, that have allowed them to divide those monuments into several groups, each of which is defined by certain traits peculiar to it. We cannot make that distinction here. The common characters that give to all these works an air of relationship are sufficiently marked, that one can regard that primitive civ-

civilization as forming an homogeneous entirety, at least from the point of view of art. In these conditions, we do not fear to urge in support of the theses, that we propose to support, proofs or indications , if it be preferred, that we have collected nearly everywhere in the different provinces of the realm of geometrical decoration. The safe rule that we shall impose on ourselves is, that our observations will only be based on works in which this style, still near its origins, has retained all its characters, so to speak. By this means we leave aside for Greece the most advanced vases of the Dipylon, with t the personages there represented, and for the barbarians as a Greek would have said, the "situles" of Styria and of the valley of the Po, or a chisel that already did not lack skill in modeling scenes of games and of sacrifices, hunting and war.[1]

Note 1.p.186. One will find reduced but faithful figures of most of the representations that decorate those bronze vessels in the work of M.M. Al. Bertrand and Solomon Reinach; Les Celtes dans les vallees du Po et du Danube. 1894.

In the monuments that we are going to seek thus outside the frontiers of Greece, we shall again find the arrangements and characters, that have seemed to us to form the originality of the vases that we have just studied. The same instinct for rhythm, which recalls that of the architecture; the same habit of dividing the field into compartments, in each of which the decorator multiplies the ornaments, desiring to leave no voids, the same very marked predilection for the straight line. The straight line and its combinations furnish nearly all the secondary motives, even where the principal lines of the ornamentation are and can be only circles. Particularly from the industry of metal shall we borrow our examples, for in the different countries from which we take them, ceramics is very much behind metallurgy. Men were long satisfied there with a pottery, whose very elementary decoration comprises only some rudely incised lines. To meet with vases on which the ornament was applied with the brush, it is necessary to come down to about the middle of the 5 th century B.C., and it would be strange to take monuments of so late an epoch for seeking there some light on the origin of a style that flourished much earlier in Greece. One has the right to demand this service only from works, that may be presumed more ancient than those occupying us, or that

can at least be contemporaneous with them. The bronzes will t then almost alone offer us terms of comparison. Now in what remains of a number of pieces, cups, shields and plates intended to serve as insignia or ornaments, that take the circular form. For example, such are two disks of bronze found in Italy among the Equez.[1] Concerning the shield of Achilles, we have r reproduced the larger one of them (Fig. 17). These disks are only decorated on their faces exposed to view. Whatever the purpose may have been, the extreme care with which the decoration was executed indicates objects of price. The workmen made use of all procedures to which metal lends itself, of repoussee work, as well as engraving with the point and the dotted line. To the hammer is due the relief of the little bosses, that are separately arranged and project from the ground, a fine point traced all other designs. Those nearly touch; one feels here t the same horror of the void as on the vases of the Dipylon.

Note 1.p.185. Thisi disks have been published with a learned commentary by Gion Carlo Conestobile in a memoir entitled:- Uoora due dischi in bonnzo-italici del Museo di Perugio e soora l'arte ornomentale primitioo in Italio e in oltre parti di Europa, recherche orchoeologische comporotioe. Turin 1874. ((Extract from Memorie de l'Acodemie be Turin. Series II. Vol. 28). Also see the bronze disks from Nursio. (Notizie degli scavi. 1880. Plate II). It is the same decoration.

Among the motives composing this decoration, we find some not previously known to us. The concentric circles circumscribing the bands on which these motives are distributed correspond to the bands, that like belts divide the height of Greek vases into unequal zones. The very fine lines that extend here in the vicinity of the border are found on the feet of the vases. (Fig. 42). As on those vases, here not only the principal lines of the decoration furnish the circle reduced to a very small diameter; there are double or triple rings, that in places are scattered in two of the circular crowns. The curved line is here required only by the circle. Nowhere is perceived the spiral or any of its derivatives, not even that sinuous line, whose bends imitate the undulations of the sea waves. What forms the central motive is no the rosette issuing from the flower; it is a sort of star formed by the triangles open at one side and with opposed apexes. All being small with adjacent bases,

these same give for one of the bands the running motive called wolf's teeth, and in another nearer the border extends an ornament with the same principle, called the chevron, with its symmetrical breaks. finally, on the larger of the two disks, one has the fret or at least a sketch of the fret in the growing state. The motive consists of two angles, whose horizontal arms are directed in opposite directions; join those arms by a line and you will have the classical fret.

Here is a last coincidence, and it is not the leas singular. The sole motive that recalls here the existence of the organic world is that, which in Greece also appears sooner on vases with geometrical decoration; it is the bird, that one recognizes by the length of its flexible neck and that of its beak, as the inhabitant of the marsh and the shore. A frieze made of these birds surrounds the boss, that forms the middle of the disk

These types of webfeet and waders seem to have had a singular attraction for the primitive artist, both of central Europe and of Greece and Italy. To the first it appeared during the summer migration; to the second in the entire duration of the mild winters of the south. There settled in multitudes on the ponds the swans, geese and ducks, storks and cranes. In our country, where lead awaits in the morning the bird of passage, nothing can give an idea of those prodigious flights, that filled the entire district with the noise of their wings. I remember having also seen in Asia Minor in the marshes near Nicea and also near Samsoun actual armies of geese; it was in vain that I endeavored to approach within gunshot, the bird had learned mistrust. In high antiquity, man could see them nearer, disporting themselves, swimming, diving and passing near in great flocks, at the tops of the reeds and tamarisks. One believes himself to feel the echo of the impression, that this sight made on the mind, in a comparison of Homer and in the imitation of it, that Virgil has given. (Latin).[1]

Note 1.p.196. Homer. Iliad. II. 459. Virgil. Georgics. I. 360-3

The two disks are not isolated objects whose ornamentation presents an exceptional character. In all central Italy, this system of ornamentation was not solely applied to metals; one finds it on the clay vases with incised designs, enclosed within the so-called pit graves, that are the oldest type of Italic and Etruscan tomb.[1] No if one could be tempted to see in the

bronze objects imported articles, it would not be the same for those potteries, that have come from the cemeteries in thousands; the were necessarily fabricated at the place. to show the identity of the style, it suffices to present here some specimens of this manufacture, some taken from the cemetery of Villanova in the vicinity of Bologna (Figs. 73, 77), and the others from the necropolises of Orvieto and of Chiusi, in Etruria. (Figs. 74, 75, 76). One will recognize the motives that we have found in Greece and again seen on the metal disks, circles, frets in their varieties, chevrons, incomplete triangles set within each other, lozenges, and the division into panels with centre occupied by a fylfot cross. On those clay vessels as on the bronze plates, scarcely anything arouses the idea of life; on only one appears the image of man, it is so well concealed among the flourishes of the linear decoration, that it does not modify the general appearance of the entirety (Fig. 77). The outside of that bowl is entirely covered by ornaments, that are arranged in concentric zones, but without their being limited by circles traced with the point. Here are arranged in a row of aquatic birds, met with so many times; but nearer the border is the human figure imitated in an entirely schematic manner, that one believes that he can recognize in the little details, that all have their heads turned toward the centre. With regard to the actual dimensions, this figure has been more reduced than that of the bird, and the form has been more changed; yet it seems that there is a dancing chorus, analogous to that presented to us on the vases of the Dipylon (Fig. 50). Like those, the bowl of Villanova dates from the time when the geometrical style tends to lessen the rigor of its system.

Note 1.p.189. For the description of those tombs and their equipment, see Chapters 2 and 3 of Jules Martha's L'Art etrusque. Paris. Didot. 1889.

We could multiply these examples; but those that we have selected suffice to justify the comparison. What they demonstrate is, that there was a time in Italy during which among the peoples, who appear to have maintained very few relations with the outside, the workmen constantly applied a system of ornamentation, which does not sensibly differ from that, which we have studied in the monuments of one of the periods of the development of Grecian ceramics. In both is the same principle; those are

the same elements that are grouped in the same fashion by the designer. Like the vases of the islandsor of Athens to which we compare them, the potteries and bronzes furnished by the most ancient cemeteries of Umbria and of Etruria are not dated; no inscriptions, no more than on those of the Egean sea. However, by an entire series of remarks and deductions, the learned have labored to restore the history of primitive Italy and have arrived at an approximate chronology; according to them this would be between the beginning of the 10 th and the end of the 8 th centuries, that the still rudimentary civilization flourished, already very distant from barbarism, whose relics have been preserved by the cemeteries from which we have borrowed some t things. Now our researches lead us for Greece to a result entirely similar; during the course of some three centuries the gemoetrical style had succeeded the Mycenaean style, and that had accomplished the evolution which we have followed to its end.

We know that the Dorians and the other warlike bands, whose intervention so profoundly modified the condition of Greece, descended from the mountains of Macedonia. On the other hand, one believes that he follows the trace from the foot of the Rhetic Alps to the centre of the peninsula, of the tribes t that have peopled Italy, and which under various names have finally played the first part there.

But in regard to both, these facts have suggested a very probable conjecture; we shall have to seek at the north of the Balkans and of the Alps the origins of the first country of the geometrical style. This system of decoration the fathers of the Dorians, of the Umbrians, Sabellians and Etruscans, practised in those vast regions of central Europe, that they inhabited side by side before passing the barrier of the lofty chains bordering the plateaux, of spreading themselves in the basin of the Mediterranean; they brought it with them in their c baggage, if one may so speak. If this be so, nothing is more natural than the resemblances that have struck us. Whether they were directed toward the southeast or the southwest, these emigrants had no time to lose on the journey, the habits and tastes, that they had acquired in the course of a slow and laborious apprenticeship. However seductive it may be, this hypothesis would fall of itself if in the region itself, where we in-

incline to seek the cradle of the geometrical style, there did not remain some monuments. Is that the case? The response to that question will be furnished to us by the monuments of the age of bronze or of the first age of iron, that from Hungary to France, from Tyrol to Scandinavia, have been taken from the tombs of the peoples, that Greco-Latin civilization scarcely reached before the beginning of our era.

To make a comparison of objects having like forms and an analagous purpose, here are two bronze disks, one of which comes from Austria (Fig. 78) and the other from Sweden (Fig. 79).

In general both are identical with that of the plaques of Alba Fucensis. The same little bosses that project from a decoration executed with the graver. The motives are those that we have already noticed, the fret, though incomplete and in t the state of a sketch, the triangles witr open bases serving to complete a central motive, or indeed more reduced and filling an entire band with the notches of their points, the rings formed by circles of small diameter with a point at the centre, bands of parallel lines, etc. (Fig. 78). On the disk in Vienna nothing recalls life; but a row of marsh birds with some bosses raised with the hammer make the sole ornamentation of the disk in Stockholm (Fig. 79).

In Greece the painter loved to connect those rounds by tangent curves, often wit central points, that he scattered over the body and neck of his vases (Figs. 38, 39). We have not found this motive in monuments from Italian sources; but one sees it reappear on the bronze belts, that have been taken from the t tombs of the celebrated cemetery of Hallstadt in the province of Salzburg in Austria (Fig. 80).[1] This is particularly one of the ornaments preferred by the workman that fashioned the belt plates of the same metal, that have been collected in Denmark and Sweden (Fig. 81).[2] The scrolls that pleased that artisan r recall those of the Mycenaean spiral.

Note 1.p.202. Von Sacken. Das Grabfeld von Hallstadt in Oberoestreich und dessen Althertümer mit XXVI Tafeln. Vienna. 1868. Besides the example cited, Pl. IX, Figs. 6, 7, 8, and Fig. 4 on Plate X.

Note 2.p.202. O. Montelius. Les temps prehistoriques en Suede et dans les autres pays scandinaves, a work translated by S. Reinach, with map, 20 plas containing 120 figs. and 429 figs c

in the text. Ernest Leroux. 1895. Besides the object reproduced here, see Pl. VIII, Figs. 6, 9, 10, and Figs. 65, 67 in the text.

One remembers that the potters of the Dipylon loved to place on the covers of their vases horses or birds modeled in the r round (Fig. 68). Examples of that arrangement are also found in central Europe.[1] Here is a bronze pail from Carinthia, where images of horses ornament the edge of the vessel (Fig. 82).

Note 1.p.203. Kunsthistorischer Atlas, herausgegeben von der K. K. Central-commission zur Erforderung und Erhaltung der Kunst und historischer Denkmale, etc. Part I. Collection of illustrations of prehistoric and early historical finds from the lands of the Austrian monarchy. Edited by Dr. Much; 100 pls. and numerous figures in the text. Vienna. 1889.

The study of the pieces composing this series then leaves a very clear impression; the principle of the decoration is the same as that in Greece and Italy; the same elements are grouped there in the same spirit.

It seems impossible that men have not been struck by the resemblances; they must have also noted the differences. Among the monuments that have been presented as specimens of linear decoration from Italy, central and southern Europe, is no one where this decoration has the same appearance of coherence as on the Greek vases of the same sort. In both, the elements are the same; but the entireties do not have the same aspect, the same look.

The hypothesis that we have presented gives the reason for that difference. The motives that we have enumerated, constituted in the course of the period preceding the dispersion, the repertory of the rustic ornamentist, among all the semi-barbarians that inhabited the valley of the Danube. Those of the peoples that passed neither the Balkans nor the Alps remained during long centuries a nearly the point where they were before the separation; but it was quite otherwise with the group, whose dash carried them to the shores of the Egean sea. The immigrants there found established the practice of an industry and of an art much more advanced, whose monuments they found everywhere, either in the form of richly decorated edifices, or of works of sculpture, of jewelry and of ceramics preserved in the treasuries of princes and in the tombs that they pillaged. They saw and admired; the impressions so received could not fail to

incite them to develop and perfect the mode of ornamentation familiar to them.

On the other hand, skilful artisans were not lacking in Greece; those that had previously worked for the Achaian kings had left behind them heirs of their processes and their secrets. Deprived of their ancient patrons, these workmen had in interest in ensuring for themselves new ones, in fabricating objects with a fashion in accord with the taste of the powerful men of the time. To succeed in this, they only had to inspire themselves by what they saw. The motives of linear decoration ornamented the arms of the warriors of the North, the jewels by which their wives were decorated, the clothing that they wore, and the fastenings that served to fix it on the body; in all that costume and equipment of the new masters of Greece was where the ceramist, a pupil of the old workshops, would have sought suggestions and ideas.

What must have lent most to that sort of borrowings was metal. We know neither the sword, helmet, nor shield of the Dorian soldier; but it is otherwise with the brooch. That only appeared at Mycenae very late, in the tombs of the lower city, which a are perhaps of the time when the Dorians had already set foot in the Peleponnessus.[1] On the contrary, those clasps are frequently found in the tombs that contain vases of the geometrical style, and they have also been collected in the most ancient layers of rubbish, which at Dodona and Olympia were formed around the temples by the accumulation of the offerings.[2] The p brooch thus carries its date, at least approximate. It would be about the 10 th century that the custom began to extend among the Greeks, and one has based thereon th search for the type of ornamentation that the metal received from the artisan among the Dorians and related tribes. To justify this assertion, it suffices to show here a brooch that came from Olympia (Fig. 33). On both faces of the wide plate is nothing but motives of the geometrical style, panels formed by parellel bands, points, chevrons and wolves' teeth. In the central part is a bird, like those found so often on the vases, and something that vaguely resembles lanceolate leaves. The same kind of decoration is on bronze bands collected at Olympia and Dodona, bands that served as facings of chariots, coffers, seats and other furniture of wood.[1] One of the ornaments that most frequently fills the field

of those bands are concentric circles connected by tangents, and between two rows of chavrons (Fig. 34). Elsewhere it is the plait, where the eyes of the guilloche are filled by bosses with slight projection (Fig. 35).

Note 1.p.204. Histoire de l'Art. Vol. VI. p. 590, 990.

Note 2.p.204. Furtwängler. Die Bronzefunde aus Olympia. p. 36-38.

Note 1.p.205. The same. p. 10, 11.

The sedentary artisan, fixed in the ancient cities of European Greece and the islands, then found in those works in metal the models tha it was easy to imitate, while one brought into Greece with the invaders could not avoid suffering the influence of the models, that were offered him by the legacy of the past, what remained from Mycenaean civilization. From this collaboration of the conquerors and the vanquished, of the tribes from the North and the ancient inhabitants of the Hellenic peninsula was born the new style, which came to replace the Mycenaean style at the moment when it already betrayed fatigue and exhaustion, on the verge of the shock that should overthrow so thoroughly the society where it had flourished.

The elements utilized by this new style are found among other peoples; but about the 10 th and 9 th centuries in Greece, there was derived from them quite a different role, from that made by those who had cultivated elsewhere the same sort of design; they knew how to assign to each of these elements the place best suited to it, to establish a close connection between them all, and to group them according to the laws of symmetry and rhythm. In Greece and in Greece alone, from these motives that appeared elsewhere isolated and scattered, the artist had the talent to compose a system, all parts of which are in harmony with the others, and where the detail is subordinated to the effect of the whole. Linear decoration is a human phenomenon; one finds its traces everywhere; but nowhere of the same degree as in Greece, did it end in the formation of what can be termed a style, in the entire force of the term, a truly original style. This style is what the historian designates under the name of the geometrical style, when he follows Grecian art in its ample and rich development.

Linear combinations already held a great place in decoration in the course of the preceding period. It supplied to Mycenaean

ornamentation very varied motives; but they are there mingled with other elements. Mycenaean art, with the peculiarities of its original style had remained the art of some privileged kingdoms; it had its centres of production in the eastern part of the Hellenic peninsula and in some islands, such as Rhodes and Crete. In the rest of Greece a number of workshops were c content with a very rudimentary geometrical ornamentation, which scarcely differed, except by the use of color, from that which forms the incised decoration of the oldest vases of the Troa and of Cyprus.[1] That ceramics, where the design applied by the brush is extremely simple, is found and has been studied in Caria,[2] at Amorgos and in the Cyclades,[3] at Cyprus,[4] in Attica and Boetia,[5] and even in Italy;[6] it has created painted vases to which it is difficult to assign a date, even by comparison; one does not know whether they are earlier or later than the vases with flat tones or the vases with lustrous tones from Mycenae and from Ialysos.

Note 1.p.208. Histoire de l'Art. Vol. VI. Figs. 445, 458; Vol. III, Fig. 485.

Note 2.p.208. The same. Vol. IV. p. 325-331.

Note 3.p.208. Dümmler. Reste vorgeschichte Bevölkerung auf den Cycladen. (Athen. Mitt. Vol. XI. p. 15-48; and Beiloge 2); he presents several vases with very simple linear decoration.

Note 4.p.208. Dümmler. Der kyprische geometrische Styl. (Athen-Mitt. Vol. XIII. p. 280-294). The geometrical style of Cyprus was a branch, which is no developed, of a s yle from which c come the ornamentation of the Dipylon. It had been brought to Cyprus by the Arcadian immigrations; it remained more simple that that of Attica. The straight lin dominates there; it has a marked preference for rectangles and triangles; it also uses concentric circles but does not connect them by tangents; it employs to fill its bands neither the spiral nor the chevron. As specimens of this style, see Histoire de l'Art, Vol. III, Figs. 478 (found at Jerusalem, but perhaps of Cypriote origin), 479, 476, 487, 488, 491, 492, 494, 497, 498 etc.).

Note 5.p.208. On the primitive geometrical style of Attica, see Holleaux, Monuments et Memoirs. Vol. I. p. 35-40.

Note 6.p.208. We can merely mention here a workshop represented by numerous examples in the Museum of Naples and some specimens scattered in the other galleries of Europe. There has

been proposed for designating the name of old Apulion. These are characterized by entirely geometrical decoration and by forms frequently labored and eccentric. Winter represented four examples of them (Athen. Mitt., 1887, p. 240, 242), and asks whether they were not originally from Cyprus, a conjecture that appears very hazardous; there are forms not yet found in Cyprus. We believe rather in the local fabrication, that seems to have been prolonged very late.

Vases of that fabrication have been figured and described in de Hancarville, Cabinet Hamilton. I. Pl. 46, 113. De Laborde, Collection de Lemberg. II, Pl. 48, nos. 42, 43; Furtwängler, Catalogue des vases de Berlin, nos. 288 et seq.; Edw. Robinson, Catalogue of Greek, Etruscan and Roman vases. Boston . p.54; K. Masner, Die Sammlung antiker Vasen in K. K. Oesterreiches Museum, Nos. 38-41 and Pl. I; Furtwängler, Bronzefunde von Olympia, p. 8, 9; Pottier, Vases antiques du Louvre. Pls. 29-32.

Did the workmen that fashioned these common vases, only intended for local use, on the contact with the immigrants, take an active part in the elaboration of the new style, or did the chief role in that work belong to the continuators of the Mycenaean tradition? It is rare for a corporation of artisans to modify by itself the processes of execution, that have brought it vogue and fortune. One would then be led to suppose that t the geomethical style was rather formed in workshops, that were not those which transmitted from father to son the practices of the most competent industry.

What confirms this conjecture is, that the production of vases in the geometrical style commenced before there had ceased that of the vases of the Egean style. In many heaps of fragments at Tiryns, Mycenae and Menidi, the fourth style of Mycenaean pottery, which marked its decline, is not represented or very slightly so; remains of vases recalling those of the Dipylon are found mingled with those of Mycenaean vases of the third style. On the contrary, where as in the corridor of the Treasury of Atreus, there have been gathered many fragments of the fourth Mycenaean style, there is so to speak, no trace of vases with rectilinear geometrical decoration. Those were perhaps already made in the workshops at Argos, while the ancient industry completed its evolution at Mycenae.[1]

Note 1.p.207. Furtwängler and Loschke. Mykenischen Vasen.

p. xi. Dümmler also gives in reference to Cyprus good reasons for believing that the geometrical style was contemporaneous with the Mycenaean style, at least in certain parts of Greece. (Athen Mitt. Vol. XIII. p. 288-294).

If Mycenaean ceramics and that succeeding it thus continued side by side during a certain time, one terminating its career while the other developed its methods, one would not be surprised to discover vases, that by their forms and the style of t their decoration, adhere to both styles. These vases exist in different galleries; but the union of the two types makes itself felt better, where one can study it in an entire group of pottery, and there is reason for believing that this came from the same workshop. Such is the case for a series of pottery that came from the cemetery of Salamis.[1]

Note 1.p.208. Histoire de l'Art. Vol. VII. p. 51. Note 1.

These vases are all of small dimensions and recall Mycenaean pottery by their forms. There are a number of examples of the saddle vase (Fig. 86); but in the decoration is no trace of t that taste for the imitation of plants, marine animals and insects, that characterizes the true Mycenaean art. Nothing is here but a very simple linear decoration, bands of red and b brown that extend around the lower part of the body, and above in the vicinity of the neck are diagonal squares and semicircles with opposed convexities. Yet what is a memorial of the earlier ornamentation is the spiral, that the painter of the Dipylon scarcely employs, while he makes constant use of the fylfot cross and the fret, which is wanting at Salamis (Fig. 87). The motives are otherwise far from being so close as in the pottery of Ceramicos; a large part of the field remains void. This pottery of Salamis is at the same time of the impoverished Mycenaean and of the geometrical in the growing state.[2]

Note 2.p.208. At Eleusis, in a tomb buried at a great depth, have been gathered vases, that appeared to offer the same mixed character. (Ephemeris. 1889. p. 189-191). Recent discoveries made at Egina, according to me, furnished monuments of this kind.

There being given this more or less prolonged coexistence of the two ceramics, one expects to prove that certain forms and motives are common to them. The ceramics of the Dipylon, as n have shown, has no retained all the forms that its predecessor loved. As for the motives, some are found in both. Such are the

knobs that reproduce the projection of the bosom of the woman.[1] A sort of sinuous torus similar to a hairy caterpillar,[2] four leaves opposed in pairs,[3] concentric circles,[4] conjugate semicircles,[5] circles connected by tangents,[7] triangles,[8] lozenges,[9] checkers,[10] quadrilles,[10] the circle in which is inscribed a cross.[12]

Note 1.p.209. Mykenischen Vasen. Atlas. 22, 58.

Note 2.p.209. The same. 24, 133.

Note 3.p.209.The same. 226, 227, 239, 321.

Note 4.p.209. The same. 13, 145, 149.

Note 5.p.209. The same. 36, 315, 382, 398.

Note 6.p.209. The same. 173, 175, 241, 242, 370.

Note 7.p.209. The same. 31.

Note 8.p.209. The same. 160, 161, 183.

Note 9.p.209. The same. 248, 357.

Note 10.p.209.The same. 241.

Note 11.p.209.The same. 183.

Note 12.p.209. The same.168, 231, 232.

Did ceramics after the Dorian invasion borrow these motives from Mycenaean ceramics, or rather did these two ceramics derive them from a common source in the repertory of the primitive geometrical? the problem is not easy to solve, and one experiences the same embarrassment concerning the images that came to be inserted in the spaces of the linear decoration. Aquatic bi birds appear on the Mycenaean vases;[13] but they do not present themselves in the same conditions as on the bronzes of central Europe or Italy and on the vases of the Dipylon. There the birds are ranged ir long files, where is always repeated a single outline. At Mycenae the bird is no better drawn; but it is isolated in a large field or indeed appears in pairs. Its attitude changes from one vase to another, and even in the extreme awkwardness of the sketch, one believes that he divines that the painter has had some care for the living model. That feeling of life is what will be wanting for a long time to the ceramist of the following age. When he will dare to attempt the human figure, he will present it in a more schematic and geometrical form than it was at Mycenae, and the themes of the painting in which it appears will further not be those that Mycenaean art loved to treat. One scarcely finds in the vases of the Dipylon that one scene can be regarded as a borrowing, that the

later ones made from their predecessors; this is that of the chase of the hare. (Fig. 64).[1]

Note 13.p.209. Mykenischen Vasen; 24, 63, 116, 186, 383, 387,40 Histoire de l'Art. Vol. VI. Figs. 467, 474, 489, 490, 494, 498.

Note 1.p.210. Histoire de l'Art. Vol. VI. Fig. 498.

The question of the relations of Mycenaean ceramics and of ceramics with linear decoration still remains very obscure. For the latter industry, the period of attempts and experiments escapes us. If one collects its remains in the islands or at Athens, it evidences everywhere a taste, whose course is no longer to be sought. It is a style already formed; whatever its starting point, it must have spread very rapidly in the entire basin of the Egean sea.

This point of departure escapes us. All that we can prove is, that among the vases where the principles of the style have been applied with most vigor, a certain number of them came from the islands of Melos, There (Fig. 38) and of Rhodes. From the highest antiquity, Rhodes was one of the principal centres of the ceramic industry. Men have not forgotten what in eresting examples of Mycenaean pottery have been furnished by the cemetery of Ilaysos. That of Camisos has yielded but few Mycenaean vases; but the ceramics of the succeeding centuries is represented there by pieces, whose appearance is sufficiently peculiar, that one does not hesitate to see there the product of a local manufacture.[2] Mos of the vases of the geometrical style are distinguished by a species of decoration, whose use seems peculiar to the potters of Camiros. The designs are there detached as usual in brown on the red of clay, but the brush has the s same black lustre over all parts of the vase, where they did not desire to place ornaments. For example, here is a beautiful hydria of very careful execution (Fig. 39). Chevrons, lozenges and crosses ornament the neck and the top of the body, divided in panels. At the height of the shoulder, marsh birds form a frieze intersected only by the attachment of the ears. The part of the black is greater in the cratera, which has especially this singular, in that one notes several times repeated there between the concentric circles, an ornament in which one believes that recognizes the palm-tree, with the terminal group of its fresh palms and the falling of the withered palm leaves. (Fig. 90). The motive is already found on Mycenaean pottery.[1]

from the repertory of the workmen of the first age, it had passed into that of their successors.

Note 2.p.210. Jahrb. des d. arch. Institut. 1886. p. 134-137.

Note 1.p.211. Furtwängler & Loeschke. Mykenischen Vasen. Text. p. 24, 45. Fig. 25.

There is another fabrication that cannot be passed over in silence; it is that of Beotia; it has been very fruitful. It is possible that it had its centre a Aulis, the same vases being found at Thebes, Tanagra, Ptoion, and also elsewhere. The existence of the workshops of Aulis is attested by Pausanias.[1]

Note 1.p.212. Pausanias. IX. 19, 6.

Two periods have been distinguished in the development of the most ancient Beotian ceramics; one representing the primitive geometrical, and the other with its creations contemporaneous with the vases of the Dipylon.[2] the first is known principally by the excavations of Ptoion. "In the deepest of my trenches," says M. Holleaux, "I collected a great quantity of pottery pain ed with black varnish. These are for the most part cups, or great crateras and beakers of different forms. Their ornamentation is meagre and monotonous, little connected and quite scattered. Lines broken in zigzags, rows of lozenges, triangles and rectangles, voids filled or crossed, form the principal basis. Groups of concentric circles are placed in a row and frequently tangent, count in the number of motives most freely repeated. Here and there are found some representations of animals, water birds, more rarely quadrupeds. Never or scarcely ever appears the human figure.[3] Those vases must be the work of the local industry, for nowhere else has been found pottery exactly similar to this. On the other hand, this workshop did not suffer in any degree the influence of the Dipylon. Without speaking of scenes composed of several persons, that are never found in its products, one notices that no part is played here by the motives that characterize the style of the Dipylon, such as the quatrefoil and fret."

Note 2.p.212. These characteristics of Beotian pottery are indicated according to Böhlau, Böotische Vasen, p. 327-328. (Jahrb. 1888, p. 325-361). Also see Pottier, Catalogue, Part I p. 238-246, and Holleaux, Figurines beotiennes en terre cuite, a decoration geometrique. (Monuments. Piot. Vol.9,p.21-42.pl.3.

Note 3.p.212. Holleaux. Figurines beotiennes. p. 40.

Beotia adjoins Attica. When the potters of Athens had become sufficiently skilful, so that their works had gone beyond the seas, for example to Cyprus, for a stronger reason must they have been carried by commerce among the nearest neighbors of Athens. There have been found in Beotia vases apparently of Attic clay, painting and firing;[4] but beside those imported articles are found in greater number other vases, in which are divined copies of Athenian types executed north of Citheron.

Note 4.p.212. Bohlou. Böttische Vasen. p. 351-353 and Note 17. Holleaux. p. 38. Note 1.

Beotian vases are recognized by their clay, which is less dense than that of the vases of Athens. Small particles of white limestone are mixed with the clay, and show that it was carefully prepared. Its color is pale yellow turning sometimes to red, but which never has the warm tone of the paste of the Dipylon. The turning betrays a certain negligence. The upper edge is not always perfectly horizontal, and the walls are o often needlessly thick. The decoration does not seem laid directly on the clay, as in Attica; it is usually applied on a layer of yellowish white. The color used is a dark brown or a violet red of flat color. Very rare are white touches intended to indicate certain details within the figures. The drawing lacks firmness; lines traced with the brush are heavy; the lines break and start a little farther on; it seems that the painter worked too rapidly.

There is not only something lax in the execution, which denotes the Beotian origin; there is a certain vase that is entirely Attic in form, but whose ornamentation presents peculiarities that change its character. The Beotian decorator has a v very marked preference for the broken line; he uses zigzags to fill compartments in which the Athenian painter preferred to place other designs (Fig. 91). Otherwise most of the motives, the fret, fish, quatrefoils and the band of birds, belong to the repertory of the potters of Athens (Fig. 92); but the broken line ornaments the foot of the vase, and what particularly proves that this was not made at Athens is the white glaze; t there is also a blunder of the copyist, the fish that swims on its back and not on its belly. A little hydria offers motives, all of which we have found on the vases of the Dipylon, the f

fylfot cross, serpent, marsh birds (Fig. 93); but here the swans or cranes are treated in a freer style than at Athens. Likewise on a cup (Fig. 94), beside a great fylfot cross that recalls the products of Athenian fabrication is found a rosette of two colors, that no longer has the rigidity of the quatrefoils of the Attic painter. The decoration here is everywhere less rich and with an arrangement less wise than at Ceramicos; but there is a more modern appearance on the whole.

Nowhere is more apparent the influence that the Athenian fabrication has exerted on the Beotian than on the amphora, one of whose sides we have reproduced (Fig. 9). On the other is seen the dead reclining (Fig. 95). The theme is that of the great Attic vases placed over the tombs. At the head of the state bed a woman waves a fan over the head of the corpse; it is there like a first sketch of a group that one will later see repeated on the lecythes of Athens. At the foot of the bed a woman takes the dead by the hand and addresses him in a passionate burst of lamentation. At the top are men with swords at their belts, and at the sides are women in checked clothing; all these persons make the gesture of tearing the hair. Over the couch and between two warriors is perceived a very little figure that seems to run. Is it a child? We have already seen the orphan have his place on two of these vases (Figs. 6 and 60); but the movement of running is poorly explained. Other children appear to have been represented near the bottom of the picture.

The drawing here presents singular contrasts. Its awkwardness is extreme. However they are clothed, the breasts of the women are indicated, and to show both, the painter has placed them in profile, one above the other. Yet he has a desire to be more accurate than his predecessors. Thus for the men he has not forgotten the baldric, while on the vases that served him as models, the sword hangs at the side without showing how it is attached. Likewise for the human body. In the projection that the brush has given to the hips of the women, there is an effort to come nearer nature. The artist aims at expression. He has desired to make the mouths of the weepers cry aloud; he has emphasized this by separating the lips, between which he extends the tongue. He does not have the sure hand of the painters of the Dipylon, nor particularly that skill in composition

that distinguishes them; but in his aspirations, he has advanced beyond them. This painting must have been executed quite late, when in Beotia as well as in Athens art tends to leave the narrow round within which it had been enclosed until then. What further denotes the Beotian origin is this piece, besides the paleness and mediocre quality of the clay, is the incoherent arrangement. The figures are thrown as if by chance on the field. One does not find here that balancing of the groups, which at Athens imparts a certain nobility to the decoration of the vases, even when the execution is most barbaric.

We have been only able to give very brief indications of the local workshops, and on the different species of the geometrical style. Yet this brief survey will have sufficed to illustrate a principal fact, the importance and originality of the role played by the workshops of Athens in the development of this style. Everywhere else that in the provinces, as in Beotia, where men are inspired by Attic models, the ceramic painter has only employed the figure as an ornament, that would throw some variety into the monotony of his linear combinations. Doubtless in many vases that came from the excavations of Ceramicos, the figure retains this purely decorative character; but elsewhere it enters into the composition of pictures that have a subject, a subject seized by the spectator at first sight, in spite of the imperfection of the rendering. The Mycenaean painter with his inventive spirit had indeed attempted something of this kind; but those essays were still timid and were interrupted too soon to lead to a change in this system. The change was only accomplished in those vases of the Dipylon, where the artist uses the clay as we use canvas, to paint scenes that may be the representation of life. That artist thenceforth entered a natural path; he preludes afar the masterpieces that his heirs will produce from the 6 th to the 4 th centuries.

The Athenian ceramists of the classical age owe much to their obscure predecessors. The potters of the Dipylon received from the Mycenaean potters the secret of this beautiful lustrous black, so resistant, and that their successors continued to employ, at first to fill the outlines of their figures, dark on a light ground, then later to form the glazing of the ground,[1] in the system of vases with red figures. All that chemical analysis has proved, is that this black contains an oxide

of iron; but men have not succeeded in reproducing it, in obtaining a tone that has the same value and the same solidity as the ancient color. By its vigor, by the freedom of the contrast that it produces, this black appears to have so satisfied the potter, who in Athens at least rarely used another tone during a very long time. Where we believe today that we see red, there is most frequently only the effect of badly directed firing. The red is only burnt black, or black wanting. This is what causes thought by more than one vase, where the tint of the decoration is not everywhere the same. It is black, very frankly black, toward the top of the piece, also black under the ears that form a screen; on the contrary, on the bottom of the vase it changes to red. This is because that lower part of the pot was nearest the souece of heat, the ardent fire. One of the advances made by ceramics will be to learn in time to better regulate the use of the oven, to avoid the flames from the fire. It also seems further, that on many vase in our galleries, this was by the effect of a superoxidation, that the black glaze has changed to black, and to red by prolonged contact with the damp clay; this would be a phenomenon analogous to that which produces rust on iron.

Note 1.p.217. On the black glaze of Greek vases see Durand-Greville. La couleur du decor des vases grecs. (Rev. Arch.1891[1] p. 99-118); Pottier. catalogue. Part. I. p. 131; Engel. Rev. Arch. 1897. p. 256-257; Lechat. Rev. des etudes grecques. 1898. pa 465. Engel has asked if this glaze is not furnished by a deep black liquid secreted by the cuttle-fish, and Lechat remarks, that the predilection with which the Mycenaean painters have represented that animal on their vases renders this hypothesis seductive at fire view; experiments and analyses are necessary to confirm it.

The Mycenaean painters have frequently employed a slightly bluish white besides red and brown. Later we shall see the Corinthian fabrication add to black, red and violet with touches of white. These examples were not followed at Athens. Why? Were there technical difficulties before which they recoiled? But we have seen what care professional skill is shown by the treatment of enormous vases, that surmounted certain Attic tombs. On the other hand, would this be lack of invention and poverty of mind? But at Athens for the first time the workman imagined the enc-

enclosure in his decoration, of human figures that live and act. If from the beginning the Athenian ceramist abstains from having recourse to those plays of color, this is because he obeys a secret instinct, that manifests itself still more clearly in the work of his successors. His drawing is of the greatest awkwardness, and yet he counts on this to please, on the interest that the spectator will take in the scenes that he has undertaken to represent; he has the ambition to address the intelligence by the intermediary of forms, that he aspires to render expressive, and he labors to obtain this result by the simplest means. In Ionia, at Rhodes, in Beotia, before delivering the vase to the painter, the potter covers it with a white glaze; on that coating the brush will trace the decoration. In Attica that glaze is omitted. What especially occupies the artist is the drawing, whose accuracy and clarity will be better appreciated, as it seems to have been laid directly on the clay.

It is important in this respect to explain once for all, what is meant when one speaks of colors directly laid on the ground. This is a formula that it is proper not to take literally. "All those that have tried to paint, were this a single line on a clay vase, even of polished and burned clay, know how the porosity of the surface makes this simple trace difficult. The clay absorbs like undersized paper. Today to facilitate the work are employed different gummy preparations, that disappear in firing. The Greek ceramists could have used similar processes; yet an attentive examination of their vases causes one to suppose, that frequently before commencing to paint, they covered the entire vase, not only with a transparent varnish, destined to disappear without leaving traces, but also with a solid coating, that retained its own color after firing. Let one examine the personages of vases with red figures and especially the grounds from which are detached the paintings of vases with red figures, and he will prove the presence of a coloring different from that of the clay composing that pottery. This difference will be very easily recognized if one compares the painted surfaces with the bottom or interior of the vase, that generally have not suffered the same preparation. Polishing does not seem sufficient to explain in all cases the variations of tints, which are often very apparent."[1] The difference is still more marked between the tint of the paste in the

fractures and that presented by the paste on the exterior in the panels that have received the decoration. The tint in the thickness of the wall is much more dull and more gray. There is also then the use of a sort of coating, but one of a particular species. The white coating conceals the clay; on the contrary and far from masking it, the Attic glazing accents it; it enhances the tone; it gives to the yellow or red of the clay more accent and warmth; but it renders this service with so m much discretion, that its existence was scarcely suspected until recent times. There is one of those requirements of which we s shall have more than one example to mention in the course of this history of the creations of Greece in relief.

Note 1.p.219. Millet. Un elcythe blanc en forme de gland.p. 3, 4. (Monuments Grecs publiees par l'association etc. 1895. This evidence has the greater value since M. Millet is a man of the trade, a ceramic painter. M. Pottier adheres to these conclusions.

With regard to this last development of the geometrical style, which at Athens announced the approaching and raped essay of painting of vases, one asks that the change had been aroused by lessons received from abroad, and the Attic painters must have owed something to oriental models. The decisive response cannot be furnished by history. For the preceding period, Egyptian documents have preserved the trace of the relations then existing between the islands of the Egean sea and the powerful monarchy of th Theban Pharaohs; they have confirmed the inductions suggested to us by certain types found in the excavations of Argolis and of Talysos, which cause one to think of Egypt, and by certain objects, such as scarabeuses with cartouches, which seem to have been made on the banks of the Nile; we have also proved that the Mycenaean pottery found purchasers in Egypt.[2] For the period opened by the Dorian invasion, one does not have the same resources. After the fall of the Ramessides, Egypt knows little of what passes outside its frontiers. As for Greece, it has no history yet. Then one can only question the epic poems on that subject, in which are collected the most ancient memorials of the Greek race. Now the two poems accord in showing us the Phoenicians frequenting the markets of Greece, and selling them arms, goldsmith's work and jewels. Many episodes even evidence direct relations with Egypt; Menelaus was

driven there by the tempest; Ulysses relates having ravaged t the shores of the Delta with a band of pirates and being taken prisoner, and lived for several years in Egypt and Phoenicia. This evidence has its interest; but the difficulty is to know in these tales, what relates to the period when the epic cycle closed, and on the contrary, what is only the echo of the past already distant.

Note 2.p.219. Histoire de l'Art. Vol. VI. p. 1001-1006.

It seems difficult to admit that the events of which Greece was the stage, about a millenium B. C., may have caused the complete suppression of all commerce between Greece on the one h hand, and of Syria and Egypt on the other. Rhodes, Cyprus and Crete are too near the coasts of Asia and Africa for men to begin to be ignorant of them after several centuries of contact and of exchanges; but in the new conditions, were not these relations relaxed without abruptly ceasing? What remains of them we know only from the monuments; they alone indicate to us at what time these relations were or the point of interruption, a and when they were resumed to become closer and more suggestive, than they had ever been.

There was a time that succeeded nearly all the invasions of the tribes from the North, when the arts of the Orient scarcely exercised any influence on those of Greece. On the vases with purely linear decoration and on those where the figure of an animal only appears as an ornamental motive, nothing betrays the imitation of the exotic repertory. Marsh bards, horses, go goats and deer, ibexes, all the animals that are inserted in t the panels of the geometrical decoration, live in Greece. Neither lions nor panthers; none of these fabled animals originated in the valleys of the Nile and Euphrates. If the Greeks then continue to demand from foreign merchants some articles of luxury, those reached them in too small number to furnish models for ceramics, the most popular and fertile of all arts.

It is no longer entirely the same for the pottery of the Dipylon. When one makes an inventory of the tombs of the ceramicos, he finds there ivory and glazed clay with inscriptions in Egyptian characters (Figs. 25, 26); he finds there diadems on which is figured a motive clear to the oriental decorator, the lion leaping on the stag.[1] At this time the ceramic painter also begins to suffer that influence. But he yields it only with regret.

He knows badly the art of beyond the sea; his greatest boldness only goes so far as to take some detail, that when detached from the entirety of which it forms a part, is no in harmony with what surrounds it. We have already had occasion to cite a curious example of this unskilfulness; this is the vase where the artist has introduced between groups of dancers and of musicians the image of two wild beasts facing each other and each at his side, who pull with open mouths at the body of a man, that they have seized in their jaws (Fig. 66). Nothing is more awkward than the execution of this motive. The position that the draftsman has given to the man, suspended in the air between the two beasts is entirely improbable. As for the animals, one does not know at first to what species to assign them. By their long ears, the slender proportions of the muzzle and body, one would say wolves. There is no trace of a mane. Yet one divines from the drawing of the paws the lions that the painter wished to represent; but he never saw a lion. If he had see him leaping among the bushes, he would not have forgotten to mark all the characters with one exception, that form the originality of this type. Such peculiar traits the Mycenaean artist had seized with an intelligent fidelity, that suggests to us that in his time the lion still inhabited the thickets of the mountains of Laconia, Arcady and of central Greece; but four or five centuries had elapsed since then. The population had increased; the thickets had receded before agriculture. The lion must leave the South of the Hellenic peninsula to ascend toward the wilder valleys of Pindus, Olympia and Pangea. He does not appear among the animals of the indigenous fauna on vases where those are represented; then here is the imitation of a foreign model. This group of lions devouring a prey is one of the commonplaces of current ornamentation in all the arts of the Orient. An article decorated by it would fall under the eyes of t the painter. He would be tempted by the exotic color and the novelty of the motive. He would hasten to make use of it, without inquiring whether that scene of a murder would harmonize with the rest of the picture. He has reproduced this theme from memory; if he had the model under his eyes, he would not have changed the form that he pretended to copy.

Note 1.p.220. Athen. Mitt. 1893. p. 108-110.

Elsewhere is no contrast so marked, but the motive borrowed

is not connected with the subject of the picture; it retains the character of a mere filling. Such is the case of a little cup that came from a tomb of the Ceramicos (Fig. 96). Women carrying branches in their hands advance toward a throne, on which is thought to be distinguished a seated personage, a god or goddess.[1] At the other side of the seat are two warriors with their arms and a woman kneeling on a stool, who holds a musical instrument. It is a scene of adoration; but at the end of the actors that play a part in the ceremony appear a sphynx and a winged centaur, that seem to fight each other. Like that of the lions tearing their prey, this group of two monsters facing each other is one of those of which the Asian artist makes most frequent use in the ornamentation of his fabrics and his metal cups.[2]

Note 1.p.222. By the manner in which is presented the figure occupying the throne, this image recalls what we found at Cyprus on a vase, which is an art slightly more advanced. (Histoire de l'Art. Vol. III, Fig. 523).

Note 2.p.222. Histoire de l'Art. Vol. II, Figs. 138, 139, 444, 448; Vol. III, Figs. 552, 565, 625.

Perhaps it is also necessary to recognize the imitation of a motive of the same origin in the group that fills one of the compartments of the decoration of a vase, that although discovered at Cyprus must have been of Athenian manufacture.[3] One sees there two deer that stand against a tree, and between their legs are fawns that seek the udders of their mothers. The same arrangement is painted on the end of an Egyptian box in the form of a house.[4] Finally, a memory of oriental art is the object that occupies a part of the field in the upper band of a cratera of the Dipylon. That image we detach from the entirety.(Fig. 97). One divines there a copy of one of those metal vases in the paintings of Egyptian tombs, that the Syrian tributaries present to the Pharaoh;[1] one finds again here the traits that characterize several of these vases, the slenderness of their feet, their expansion in form of a cratera, the heads of animals that project above the edges, the papyrus stems that rise from the hollow of the wide bowl like a boquet. All is there but curtailed and deformed. The Attic painter had seen one of those pieces of goldsmith's work; but he only knew imperfectly how to render the image of it, that had remained in his memory.[2]

Note 3.p.222. Histoire de l'Art. Vol. III. 514.

Note 4.p.222. Athen. Mitt. 1898. p. 302. E. Graf has just given a new proof of the Attic origin of the vase of Orvieto. This group of two deer against a tree, a motive rare in the pottery of the geometrical style, has again been found at Athens on a Pyx, that there is every reason to believe was discovered in the excavations of the Dipylon. (Athen. Mitt. 1898. p.448-449).

Note 1.p.223. Histoire de l'Art. Vol. III. Fig. 542.

Note 2.p.223. The merit of this comparison belongs to Pottier. (Revue des etudes grecques. 1894. p. 117-132).

These examples will suffice; they show to what was reduced the part made in imitation of the Orient, even in the most advanced period of the life of the geometrical style. The painter of the Dipylon is sometimes inspired by foreign models; but in the use that he makes of them, one divines caprice and accident. These exotic motives are not blended with those that compose the traditional repertory of the artist; they have modified the general appearance of its decoration. In none of the vases that have passed under our eyes have we seen substituted for the fret the garland in which alternate the flowers and buds of the lotus, a garland that a little later will become the necessary decoration of nearly all painted vases. The borrowings that we have pointed out only possess interest as symptoms of a change of taste that will be prepared and manifest itself at all points of the Greek world; they are too rare for the historian to prevail on himself for the purpose of separating the fabrication of the Dipylon from the most ancient forms of the geometrical style. All the vases that we have just studied come from that, if not by the choice of themes, at least by the character of the ornamentation and by the manufacture.

When was accomplished the change that we have just predicted, when the geometrical style gave place to another style, besides the progress of design, the introduction of numerous motives borrowed from oriental models and from themes, that most frequently are taken from epic myths? Only indirectly can one attempt to reply to that question.

As for the initial date, it is given by the Dorian invasion. The geometrical style succeeded the Achaian kingdoms. It would then be toward the end of the 11 th century and in the course of the 10 th that the new system of ornamentation began to be

diffused in Greece. The starting point may be clearly perceived; as for the point attained that marks the end of this development, it is to be sought after the first olympiads, and yet the embarrassment is great when it is necessary to fix on a half century. Not the least vestige of an inscription has been found on any vase or any remains of a vase of the primitive geometrical style, and that which makes no place in the representation of life, so to speak. In even the pottery of the Dipylon, writing appears in even the last years only under the form of scratches;[1] that example was further unique. However interesting was that text in several respects, it did not offer any indication to one that wished to date the pieces; the point of the tool may have incised the clay long after the oenochoe on which it appeared, a vase given as a prize in the games, had left the hands of the workman. In the rubbish of the Acropolis were recently found two fragments of pottery analogous to that of the Dipylon, bits on which are seen some letters traced by the brush on the clay with black glaze before firing;[2] but on the other hand the vases of this sort contained in the museums of Europe by hundreds are all without inscriptions. Thus even during the time when the Attic workshops fabricated pieces, that best represent the advanced geometrical style, if writing was not unknown, it had not yet entered into current use, as it will in the following age, when we shall see it appear on the vases, where is marked the influence of oriental models, the explanatory legends giving the names of the personages.

Note 1.p.224. Athenaion. 1880. Addition to the first Part; Furtwaengler, Zwei Thongefasse aus Athen. (Athen. Mitt. 1881. p. 108-118); Studnicza, Die Attische Inschrift. (Athen. Mitt. p. 225-230). A recent discovery seems to indicate that men then freely made collections of pottery representing the taste of preceding generations. This refers to the great Corinthian amphora, that was found among the remains of vases cast and broken on the funeral pile in the tumulus erected at Marathon to receive the ashes of the Athenians slain in the battle in 490; this amphora cannot be later than the middle of the 6 th century (Deltion. 1890. p. 65-71, 123-32. Pl. IV; 1891, p. 67, 89, 97); Stais (Athen. Mitt. 1893. p. 46-63, pls. 2-5); Houvette. Rapport sur une mission scientifique en Grece. (Nouvelles archives des missions. Vol. II, p. 326-335).

Note 2.p.224. Botho Graf. Ueber die allgemeine Ergebnisse der Vasenfunde von der Akropolis zu Athen. (Arch. Anzeiger. 1893.p17).

Men have sought to date the vases of the Dipylon according to the form of the ships that are represented thereon; they have thought to recognize the pentecontores, that only appeared toward the end of the 8 th century. It is stated that it is not natural, that among a people not then possessing a military marine, one should have the idea of representing combats on the sea. In the choice of this theme and in the favor that it seems to have enjoyed, men have desired to find the echo and result of the sensation, made throughout all Greece by the great naval battle fought in 664 by the Corinthians and the Corcyrians.[1] The value of these arguments has been contested by very good reasons. The passage of Thucydides to which reference is made does not have the sense attributed to it. The ships copied by the painters of the Dipylon are not pentecontes; they are dieres. We further have so little information on the naval architecture among the Greeks, that it is impossible to know except for the trireme at what time and among what people a certain type made its first appearance. What concerns the moral effect of the shock that occurred between the Corinthians and Corcyreans is still more problematical.[2] Why had not the Athenians thenceforth devoted to maritime affairs, to take pleasure in the image of naval combat?

Note 1.p.225. Kroker. Zeit und Heimat der Dipylonvasen. (Jour. 1886. p. 106-113).

Note 2.p.225. Pernice. Ueber die Schiffsbilder auf den Dipylonvasen. p. 304-306. (Athen. Mitt. 1892).

If one can hope to leave that uncertainty, it is by pursuing a different path. What is especially important is to know if the art of the Dipylon is contemporaneous with the long elaboration of the Homeric poems, or if it transmitted its evolution only when the Iliad and the Odyssey had already assumed nearly their definite forms, and in that case what interval of time on is right in assuming between the time when the epic poem was composed and that when the potters of the Ceramicos decorated the vases, that ar the masterpieces of the geometrical style.

In the scenes painted on those vases is more than one trait, that corresponds to the descriptions of the epic poems. The ar-

armament of the warriors figured there is the same as that of the heroes of Homer; they have the sword hung to the belt and around the calves are greaves or chemides. Their long hair falls on their shoulders, like that of the Achaians of the poet. The customs seem similar in many respects. A theme frequently t eated in the epics is the tale of expeditions undertaken with a view to pillage, by a band of bold companions.[1] Now several painters of our vases appear to allude to adventures of that kind (Figs. 63, 70). When these paintings were executed, piracy was still the custom. It is the same for the funeral rites. In the paintings that show the pomp of the obsequies, the dead is seen extended on a state bed like Patroclus in the Iliad.[2] At Athens and before Troy, it seems that a chariot race forms a part of the programme; one can interpret as a preparation for the race the series of chariots represented on the vases (Fig. 7), and ask if the tripods seen there are not the prizes intended for the victors (Fig. 8).[3] On more than one piece, the painter has designed a dancing chorus, similar to those that decorate the shield of Achilles (Figs. 59, 96). Only the least details do no show the conformity in customs. In one of those vases in the form of a box, of which several examples have been given (Figs. 46, 63), the coverand the edge of the body are pierced by corresponding holes to receive a cord by which the cover was connected to the box;[4] one remembers that by this procedure Ulysses closed his coffer.

Note 1.p.226. Odyssey. III, 78-105; IX, 39-61, 254; XIV, 85-88, 221-234; XV, 387, 427; XVIII, 423-444, etc.

Note 2.p.226. The same. XVIII. 352.

Note 3.p.226. Iliad. XXII, 164; XXIII, 259, 264, 513.

Note 4.p.226. Monumenti. Vol. IX, pl. 40, 2 and 2 a; Annali. 1872. p. 10.

If certain practices are thus common to the contemporaries of Homer and to the potters of the Dipylon, still more are differences. Certain advances have been made since that time when t the epic cycle was closed. The heros of the epic poem only attached two horses;[1] on the vases are quadrigas (Fig. 98). The Iliad and Odyssey knew the horse only as a draft animal; on several vases of the Dipylon are seen riders (Figs. 99, 100). Finally, the form of ships has changed. According to the epithets that the epic language applies to ships, one has the impressi

that in those the keel described a curve sensibly equal at the bow and the stern. What one divines are the heavy structures with broad sides, built rather to transport merchandize and men than for rapid and aggressive movements, like those that will later be executed by the trireme.[2] On the contrary, those evolutions and murderous shocks appear already possible wit the ships represented on the vases of Ceramicos; their prow extends diminishing beneath the water (Figs. 49, 63). The end of that part becomes a spur to be covered with metal or furnished with a point of iron or bronze.

Note 1.p.227. Teams of four horses are only mentioned in passages, that appear to be interpolations. Helbig. L'epopee, p. 165. Note 2.

Note 2.p.227. Helbig. L'epopee homerique. Chap. 2. At most in one of the more modern parts of the Odyssey is an episode, that without mentioning the spur seems to be explained in a more e satisfactory manner by the hypothesis of a ship equipped with that appendage. This refers to the attack that the suitors meditate against Telemachus. (Odyssey. IV, 669-672; 842-847; XV, 28-30; XVI, 351-357, 364-370). They propose to place themselves in ambush, to attack and sink his ship, when he wished to reenter the port of Ithaca. The attempt seems to have more chance of success, if the vessel making the attack is armed with one of those points.

Finally, on one of the most recent vases of the Dipylon, instead of the great Mycenaean shield with notched sides, one already sees appear the small round shield, that soon will be represented on the vases of the succeeding age (Fig. 58). The potteries of the Dipylon then bear the mark of a civilization more advanced than that whose image is reflected in the epic poems. Now from the entirety of the researches to which the Homeric question has given rise, it appears to result that the date assigned to Homer by Herodotus is still that most probable; this is in the course of the 9 th century that the epic cycle closed. To render a reason for the change introduced in the habits of the Grecian world between that moment and that when the vases of the Dipylon were made, it is necessary to assume that several generations succeeded each other in the interval, and one thus finds placed at about the beginning of the 8 th century the hour at which this art attained its climax. From

the end of that century it must have commenced to go out of f fashion. There are no inscriptions on the vases, while from t the 7 th century were already inscribed on bronze dedications, laws and treaties; now it was easier to trace some letters on clay with the point of the brush, than to engrave them on metal.

We also have another reason for believing that the creative activity of the art of the Dipylon is not prolonged much beyond the first olympiads; this is the character of the themes treated. One does not find these subjects taken from the epic period. This is because that is not yet taken into possession by the Greek mind; it has not yet imposed on that the habit of casting all its ideas in the moulds that it has created. Yet it existed henceforth; but from Ionia where it was born, it had not yet been carried by the voices of the rhapsodists into all Greek cities, from the shores of Scythia and of Thrace to those of Africa, Sicily and Italy. There was necessary a truce of sufficient length for it to extend thus in all directions, to accredit everywhere its language and its fictions, to complete the conquest of all imaginations. The legends added to the figures appeared with the vases on which are recognized the episodes borrowed from either the Iliad and the Odyssey, or from poems lost today, and according to the form of the letters and the orthography, epigraphists do not believe that the most ancient of those inscriptions can be placed much beyond the year 600.

Between the potteries of the Dipylon and the ceramics characterized by the adoption of new themes and the insertion of explanatory legends, it is necessary to find space for another series of vases, for those called proto-Attic. Thus are designated vases that yet present but few inscriptions and scenes of a mythical character, but where is reduced the part given to linear decoration, where the drawing has a freer charm, w where begin to appear motives furnished by oriental models; palm leaves, lions, sphynxes and griffins. Admit that this transitional art with its mixed and undecided style represents the efforts of two or three generations of potters; about the end of the 8 th century the ceramic painter was emboldened to enlarge his repertory and modify his composition. From that moment, progress was continuous and rapid; art was carried into the general flight; it suffered the result of the movement of

expansion, that scattered the Greek colonies over all the shores of the Mediterranean. During the previous period, this advance must have been slower, scarcely sensible from one generation to another.

2. Metal.

From the monuments, and from them alone, have we studied ceramics. Homer knows the potter's wheel; the play of that instrument furnished him with the material for a vivid comparison;[1] but nowhere does he allude to the decoration of vases of clay. The poet has no eyes for products, whose material is without value and that the workshop of the ceramist supplies by hundreds. What arouses his curiosity, what he describes with emphasis to amuse those that hear him, are works of great vaule in which precious metals form varied alloys, where they are juxtaposed to give happy combinations of tones, unexpected and surprising effects. The art of the goldsmith is an aristocratic art, whose masterpieces are transmitted from father to son, or are kept in the treasuries of princes. The beautiful arms, cups of gold or silver, and jewels, thise arouse admiration, and their possession enhances the glory of the hero. The rest, like the clay vase, which forms a part of the furniture of any humble house, has no place assigned in this world of myths and marvels, into which the imagination of the poet transports those of his auditors. The two poems they supply information relating to the history of the arts of the metals, that completes that due to the discoveries made in the tombs.

Note 1.p.229. Iliad. XVIII. 600.

One of the traits most clearly characterizing the Mycenaean age is the introduction of a new metal into use, iron. That h has left only slight traces at Mycenae; it is found there only in tombs belonging to the last time of the primitive period.[1] On the contrary, the Iliad and the Odyssey frequently mention iron; but the heros still have arms only of bronze.

Note 1.p.230. Histoire de l'Art. Vol. VI. 590, 854-855.

At most can one cite the iron club of the Arcadian Areithoos and the iron spear head of Pandaros.[2] Nowhere is mention of an iron sword; but there is already iron of which are made tools, such as the axe or the skeparnon, which served for working wood.[3] There are also iron axes, that Achilles gives as prizes in the games, and Telemachus places in the great hall of the palace

for the archery.[4]

Note 2.p.230. Iliad. VII. 123, 141, 144.

Note 3.p.230. Iliad. IV. 485; Odyssey. IX. 391-393.

Note 4.p.230. Iliad. XXIII. 850; Odyssey. XIX, 578, 587; XXI.3.

The tombs of th Dipylon are evidence of other customs. The sword is there always of iron; it is the same with knives and arrow heads;[5] bu one would err in concluding it necessary to necessary to assume a very long interval of time between the hour when the epic cycle closed and that when the cemetery began. The ceramic painter reproduced the scenes under his eyes, while the epic singers adhered to representing a past long since. If Homer gives his heros bronze swords, this is because he knows that these were the arms of heros of former times, of those whose prowess he relates; in attributing these to them, he gives in his way what we term local color; when epic poetry flourished, the iron sword had perhaps already come into use. That would be suggested by a trait that does not seem to accord with the general themes of his poems. We mean a verse that occurs twice in the Odyssey. (Greek).[2]

"O itself the iron carries away the man," i.e.,"when man has the iron in his hand, he finds himself, even without willing it, led to commit acts of violence." That formula could only originate and form a proverb in a century, when oron especially served for fighting; the iron is more particularly the arm that slays. There is only the appearance of a contradiction. By its origin, the epic period goes back to the extensive reign of bronze; but when it ended, already from iron were required almost all the services formerly expected from bronze. This iron was wrought by the Greeks themselves. This suffices to demonstrate this by a comparison borrowed from the process of tempering in cold water; the poet says,"that gives to iron all its strength."[1]

Also hear Achilles, when he presents the iron disk that the competitors must roll on the sand of the shore. "This disk will be the prize of the victor, and whatever the extent of his domain, he will find in this mass of metal sufficient for at least five years, to fabricate all the tools needed by his shepherds and laborers."[2]

Note 5.p.230. Athen. Mitt. 1892, p. 297; 1893, p. 100, 139.

Note 6.p.230. O yssey. XVI, 294 XIX, 13.

Note 1.p.231. Odyssey. IX, 391-393.

Note 2.p.231. Iliad. XXIII. 831-835.

If from the 9 th century iron were used for making all the tools intended to split or cut clay and stone, wood and living flesh, men even then continued to make very varied uses of bronze. Melted and cast in a mould, it furnished to the sculptor a material less exposed to the chance of destruction than clay, and more easily wrought than limestone tufa or marble. Beaten with the hammer, it takes all the forms that the workman desires to give it; he extends and draws it into rings, round or square rods, suited to compose all kinds of objects for the toilet or utensils of the house. It is no less easily reduced to flat bands or sheets more or less thin, that are covered by designs engraved with the point or raised with the chisel, applied with the aid of nails on wood, and serving to face shields, chariots, coffers and furniture of all sorts. Treated by the procedure of drawing out, the same metal gave great caldrons, that formed the upper part of tripods. For vessels of the same kind that served for domestic uses and kitchen utensils, men were contented with copper; that cost less and was more malleable.

Silver and gold found their uses in objects of luxury. It does not appear from the time of Homer, that there were anywhere in the Grecian world accumulations of the precious metals comparable to those produced in the castles of Achaian princes in the course of the preceding age. That is evidenced by the memory left in tradition by the extraordinary wealth of Mycenae; it is also divined from the language of the poet, when he has occasion to mention arms of price or pieces of goldsmith's work. He does not fail to attribute their execution to Hephaestos, the divine artist, or to the Phoenicians, he speaks of it with an admiration, which suggests that he did not have many works of that kind under his eyes. On the contrary, these existed in great number in the treasuries of the Perseides and Pelopides, so that in that respect a contemporary of those princes was not affected by the surprise, that we believe a trace is felt in the descriptions of epic poets.

In the course of the troubles, struggles and displacements of the tribes, that was the result of the invasion of the men from the North, the reserves of the precious metals formed in their treasuries by the chiefs of the old dynasties must have disapp-

disappeared very quickly. The tombs retained their deposits; but of objects of goldsmith's work not entrusted to that safe shelter, more were pillaged, broken up or melted; very few of them could pass intact into the hands of the conquerors, or be preserved by the heirs of their ancient possessors. Yet there must have been waifs from that shipwreck, in several works of metal described in the epic poems one is inclined to recognize the themes and motives of the Mycenaean industry. Here for example is the stephanos, the diadem of gold, that to please Zeus, Hephaestos has made to ornament the head of Pandora.

"In the metal he chiseled many varied ornaments, admirable to see
Animals, all those nourished by the land or the sea.
He places many of them; the work was most elegant;
It was a marvel; one would call them beings endowed with life
and voices."[1]

Note 1.p.232. Hesiod. Theogony. 578-584. The word Apollon is repeated twice.

One is here very far from the dryness of the geometrical style; a different spirit inspires that effort to reproduce in their diversity the forms of the organic world. In the ornamentation of the diadem of Pandora, the fishes alone cannot represent the maritime fauna; beside them must figure the cuttle-fishes, the nautiluses, all those strange types, which at Mycenae filled the fields of the jewels and those of vases of clay.

In regard to sculpture, we have mentioned the group that decorated the outer face of the brooch of Ulysses, a dog holding between his paws a fawn that argues.[2] This theme has been found more than once in the Mycenaean monuments; we have seen there a lion, a sphynx or a griffin, who strangles a stag.[1]

Note 2.p.232. Odyssey. XIX. 228-231. See p. 119 above.

Note 1.p.233. Histoire de l'Art. Vol. VI. Figs. 405, 403, 409, 414, 428; Pls. XVI, 8-21.

One of the works that the poet describes with more complacency is the cuirass of Agamemnon.[2] It was given by Kinyras, king of Cyprus; one is then tempted to see in it a product of Phoenician industry. We have further not found at Mycenae the serpents that are erect on each of the two plates, whose junction by thongs protected the bust of the warrior; it is on the ceramics of the Dipylon, that we have found on several vases a motive of that kind (Figs. 69, 39). On the other hand, the mode

of execution of the decoration on the cuirass recalls the procedures of the Mycenaean workman. The technics are just those studied in the celebrated daggers taken from the tombs of the acropolis at Mycenae.[3] Here the theme is of a white metal, cassiteros, gold and the kyenos or copper blue, are inlaid in a bronze plate, forming a sort of mosaic. The serpents were in kyanos; now we know by the frieze of the palace of Tiryns, what an important part in ornamentation that material played, which commerce brought from Egypt and especially from Cyprus.[4] It a appears that with this blue enamel was also employed a white enamel, that is called titanos; in his description of the shield of Hercules, Hesiod mentions titanos beside ivory and electrum, whose whiteness he seems to contrast with the gleam of gold.[5]

Note 2.p.233. Iliad. XI. 19-28. On the decoration of the cuirass, see Helbig, L'epopee. p. 491-493.

Note 3.p.233. Histoire de l'Art. Vol. VI. p. 779-784; pls.. 17, 18, 19.

Note 4.p.233. The same. Vol. VI. p. 545-546, 559-560.

Note 5.p.233. Hesiod. Shield. Verse 141-143; Studnicso. Ueber den Schild des Herokles. p. 52. No. 5.

The epic language frequently employs in relation to goldsmith's works certain expressions, that should not be taken literally. It mentions staves and sceptres, shuttles and spindles, baskets and golden seats.[6] The basket for tapestry of Helen, the tables of Circe, the coffer in which Hephaestos keeps his tools, were of silver.[7] This is only a mode of speech. Of little importance to the poet is the nature or the internal composition of the objects that he presents to the eyes. Whenever he has seen the yellow of the gold gleam or the mild whiteness of silver, he mentions those metals without asking what is behind those surfaces, whose splendor caresses and charms his eyes. What touches him, what he expresses is his visual sensation, the impression that he has received. Most of the furniture enumerated above is what in real life, even when the taste for luxury was most extended, was never made of gold or of solid silver, but was freely gilded or silvered; such as the sceptres and seats, tables and coffers. What would farther suffice to remove all doubts, is, that the poet employs the same expressions, "chryseos, argyreos," in regard to other objects, where

metal could only play the part of a covering. He speaks of golden reins;[1] but those reins could have been made only of an elastic and supple material, such as leather. The same observation for sandals, sword pendants, baldrics, to which are attached the same epithets. What is understood is, that in certain cases by means of glue or by a proce s analogous to damascening, on those straps were applied thin leaves of gold or silver. As for coffers, tables, the carts of chariots, on them were fixed by little nails, bands of metal by which the wood was loncealed. Very numerous fragments of those coverings have been found in the excavations of the Dipylon, and especially in those of Dodona and of Olympia. (Figs. 34, 35).

Note 6.p.233. Odyssey. XVI, 172; XXIV, 2; V, 87; X, 277, 384; Iliad. I, 14; II, 268; Odyssey, XIX, 91, 569; IV, 131; V, 62, 355; Iliad, VIII, 436, 442; XIV, 238.

Note 7.p.233. Odyssey, IV, 125, 131; X, 354; Iliad, XXIII, 419.

Note 1.p.234. "Chrysenios," epithet of Artemis and Ares, Iliad VI, 205; Odyssey, VIII, 285.

A material that the goldsmiths and the jeweller caused to enter into the composition of their works is what Homer calls c cassiteros. This word is ordinarily translated by tin; but one has never found in Greece any object dating from either the c primitive or the classical ages, in which pure tin is employed.[2] Wherever Greece obtained it, tin came too far and in too small quantities for one to think of using it like the other metals, whose ores were within reach; it seems to have been used only to mix with copper, so as to obtain thus an alloy, bronze, precious among all others.

Note 2.p.234. All that Helbig found to cite is a bronze belt discovered in the cemetery of Alifoe (Samnium), on which is thought to be perceived traces of tinning. (L'epopee, p. 263. 1.

It has further been demonstrated by the most authoritative of the historians of metallurgy, that the Greek word cassiteros and the Latin stamnum are only late, the first under the Ptolemies and the second in the last times of the Roman empire, re received the special and clearly definite sense, that we today attribute to the word tin, derived from stamnum.[2] The practice of the workshops must know how to distinguish tin from other metals; but in the current use of the language it was treated as a simple variety of lead; it was the white lead in contrast

to the black lead, the lead properly so called. As for the term stamnum, Pliny sometimes applies it to real tin, sometimes to a mineral of argentiferous lead, that does not contain a particle of tin.[1]

Note 3.p.224. Introduction o l'etude de lo Chimie des ancienne et du moyen oge. p. 250-251. La Chimie ou moyen oge. Vol. I. p. 367-368.

Note 1.p.235. Pliny. H. N. XXIV. 47.

What is then probable is, that for the contempories of Homer, this word cassiteros designates an alloy of silver and lead, which perhaps also contained some parts of tin. The color given by that alloy was different from that of silver; the artist thus varied the tones.

If it results from these descriptions, that the workers in metal were simply the continuators of their Mycenaean predecessors, it no less results that like them, these workmen were in relations with the Phoenician workshops, from which they derived the works that served them as models. Thoas, king of the Thracians and Lemnos received a cratera of silver as a present from the mariners of Sidon, "the most beautiful that there is on earth."[2] To Menelaus , Phaedimos, king of the Sidonians, gave another vase of the same material and same form, whose edges were bordered by a circle of gold.[3] The cuirass of Agamemnon came from Cyprus, a country half Phoenician. There is also a necklace of gold and amber, that is shown to the women, in order to introduce themselves into the house of the king, by the Phoenician merchants, who carry off Eumea while yet a child.[4] It is one of those ample necklaces in several rows ornamented by beads, that falls on the chest between the breasts, and was called "hormoi;" we have found more than one example at Cyprus.[5] In the epic period, one sees the Phoenicians visit Egypt,[6] and at the same time Crete,[7] Lemnos,[8] Ithaca [9] and the Cyclades.[10] Their ships are everywhere in the eastern basin of the Mediterranean. These statements accord with the traditions, that a among the Greeks are connected with the birth and progress of metallurgy, with the intervention of superhuman workmen, the Cabires and the Telchines, to whom the myth assigns as domiciles those of the Grecian lands, that had been most frequented by the Phoenicians. It takes the telchines from the island of Crete to those of Rhodes and of Cyprus. As for the Cabires, it

places them in Beotia, at Thasos, Lemnos, Imbros and especially at Samothrace, where up to the last days of antiquity, their sanctuary and the mysteries celebrated there were in great honor.

Note 2.p.235. Iliad. XXIII. 741-745.

Note 3.p.235. Odyssey. IV. 615-619.

Note 4.p.235. Odyssey. XV. 460.

Note 5.p.235. Histoire de l'Art. Vol. III. Fig. 196.

Note 6.p.235. Odyssey. XIV. 288.

Note 7.p.235. Odyssey. XIII. 273.

Note 8.p.235. Iliad. XII. 745.

Note 9.p.235. Odyssey. XV. 482.

Note10.p.235. Odyssey. XV. 415.

The monuments confirm the deductions that we have made from a study of the poems. They are in small number, but they present the double character that we believed could be seen in the works described by the poet. One there feels both the persistent influence of Mycenaean industry and that of the arts of the Orient. As for the geometrical style, the only one then practised by the ceramic painter, it had but slight effect on the habits and taste of the goldsmith. All that it recalls at great intervals are some details of secondary importance, such as that of the enclosures into the composition of which enters the fret, and also the figures in which one finds the systematic alterations of the form, that are suited to the design of the decorators of the Dipylon.

To justify these assertions it suffices to examine the objects composing a treasure acquired in 1892 by the British Museum.[1] All that one knows of these objects is, that they were found together at Egina. According to all appearance, they formed the equipment of a tomb; but at what point of the island was that sepulchre, and what was its arrangement? That is what we are always ignorant of. By causing clandestine excavations, the unintelligent rigor of the Grecian law opposes its purpose; it does not succeed in preventing antiquities from passing the frontier; but deprives archaeologists of precious information, that without those vain menaces, one would have no reason to refuse them.

Note 1.p.236. A very complete and exact description of all the pieces composing this treasure has been given by M. Arthur J. Evans under the title:- A Mykenaean treasure from Egina.

(Jour. Hell. Stud. Vol. XIII. 1891-1893. p. 195-226). S. Reinach. La Sculpture in Europe etc. p. 95-98. 1896.

Gold is the only metal that enters into the composition of these jewels; it is combined with cornelians, amethysts and glass pastes. What is first striking are the traits that recall the motives and procedures of Mycenaean art. Here is a cup of very pure gold that weighs 1290 grains (Figs. 101, 102). It had only one ear; the three holes are visible that served for attaching that handle. The form of the cup is not that affected by the goblets found in the tombs of Mycenae; it is more flattened; but what forms the resemblance is the decoration. It consists of a star rosette, that occupies the bottom of the vase, and of four connected spirals symmetrically arranged outside it on t the wall. At Mycenae a pitcher exhibits the same sort of ornament.[1]

Note 1.p.237. Histoire de l'Art. Vol. V. Fig. 24.

This same motive, in which one recognizes as reduced to less width, decorates one of those diadems that encircled to brows of the dead at Mycenae (Fig. 103).[2] The form and mode of attachment are similar. There are also at Mycenae examples of designs traced in dotted lines.[3]

Note 2.p.237. Histoire de l'Art. Vol. VI. Figs. 538, 539.

Note 3.p.237. Schliemann. Mycenes. Fig. 370.

What more than all else arouses here the memory of Mycenae are plates of gold, of the kind of those taken by hundreds from the pits of the funerary enclosure.[4] At Egina have been found 54 examples of the same pattern (Fig. 104). At the middle is a rosette with eight leaves, enclosed in a border in which we find again the spiral. As in the round pieces collected by Schliemann are perceived very small holes pierced near the circumference. These plates from Egina likewise must have been sewn on a vestment for a glittering covering of some royal corpse. Finally, one notes rings of solid gold, whose surfaces are the same as those of the rings of Mycenae (Fig. 105);[1] but here is no bezel with an image. The rings are simpler, as the plates and diadems are of smaller dimensions, and the designs have less relief and freedom.

Note 4.p.237. Histoire de l'Art. Vol. VI. Figs. 540-543.

Note 1.p.238. The same. Vol. VI. Figs. 520, 421, 549.

Not alone by the choice of types is the goldsmith of Egina

connected with that of Mycenae; he has inherited certain procedures from him. One finds here the blue glass of Tiryns, the kyanos of Homer. On the exteriors of several rings the design is engraved in intaglio in the thickness of the metal. Very small bits of that paste have been inserted in cavities; some bits remain. Thus has been obtained nearly the effect of our champleve enamels. Another borrowing from earlier technics is the precaution taken to double the plates wrought or raised. Thus more solidity is given; thus were made the cups of Vaphio.[2] The same procedure was applied to several pieces of the treasure. The sheet that forms the double is a little larger than the other; its border is folded like a hem, on which the contour received the ornamentation.

Note 2.p.238. Histoire de l'Art. Vol. VI. p. 785.

Beside objects that one could almost believe taken from a Mycenaean workshop, there are others on which the imitation of oriental types is very sensible, more so than usual at Mycenae. Such is the case for a jewel, doubtless for a pendant of a necklace. The motive is a person standing in a sort of a boat between four branches curved around him and terminated by a button; each of his extended arms grasp the neck of a duck (Fig. 106). One will note the plumes surrounding the head; without reproducing an arrangement that might be peculiar to a certain god, they make one think of several Egyptian divinities. In the two rings projecting right and left of the neck, it is believed we that one sees a memorial of the great loops formed by the hair of Hathor. Nothing conforms more to the Egyptian fashion than the arrangement of the bracelets, placed near the shoulder and on the wrist. The legs and bust are nude. For all clothing, a drawers enclose the hips; this is the shenti with the wide band of striped fabric that falls in front to the height of the knee. In Egypt that terminates in the costumes of gods and kings by a series of uraeuses; here that ornament is wanting. According to the rule constantly followed by Egyptian art, the figure has the left leg in front. Finally, at the centre and the two ends the boat is decorated by lotus flowers. A boat whose bow and stern present the same design is frequently found serving as a support, either in Egyptian works or in the works of Egyptian style, that the Phoenicians scattered along the Mediterranean.[?]

Note 1.p.239. Histoire de l'Art. Vol. I. Fig. 588.

Note 2.p.239. Histoire de l'Art. Vol. III. Figs. 36, 623.

There is in this figure something of Osiris, whose hair and clothing are very much simplified; but there being given the ducks seized by the personage, one is rather tempted to seek the first idea of the motive in a theme, of which the decorators of the Egyptian tomb made frequent use, in that of a hunter mounted on a light boat, who pursues the marsh birds among the tangled stems of the papyrus an reeds.[2]

Note 3.p.239. Histoire de l'Art. Vol. I. Fig. 8.

The memory of Egypt evokes all these traits; yet one will not find in the paintings of the hypogeums a hunting scene, where the captured birds present the rigorous symmetry that is striking here. This arrangement is rather found in Assyria,[1] as well as on the Mycenaean intaglios; in those one finds the type that archaeologists designate by the term of Persian Artemis, a type that by the movement of the figure, holding with each arm a b bird or a hare, also recalls the personage of the jewel of Egina.[2] This heraldic style, as it has been called, is of Asian origin. Otherwise the figure, all Egyptian as it may be by certain traits, is not the literal copy of any type created by the art of Egypt. Then the jewel was not fabricated in the Delta, and it also has not the appearance of having left the workshops of Sidon; the Phoenician adheres more closely to his model. What one feels here is that it is the result of vague and multiple reminiscences, that at the risk of opposing each other, are added and mixed together. The artisan had under his eyes objects of foreign origin; he profits by two memories to avoid a literal copy.

Note 1.p.240. Histoire de l'Art. Vol. II. Figs. 331, 388, 408, 443, 444, 449.

Note 2.p.240. The some. Vol. VI. Figs. 426,[21] 428,[32] 431,[10] 432.[2,7]

The influence of oriental art again makes itself felt, but this time by a unique detail in another object, that must also be the central part of a necklace (Fig. 107). In the frame forming a circle terminated by two serpent's heads, there are four figures of animals grouped in pairs, two dogs facing each other, with one paw raised and holding a cornelian bead, and two apes back to back and holding one hand to the nose. These figures are very slender in proportions and are made of this sheets of gold; little chains and rings if ingenious arrangement connect

them to the frame.

Attached to the fate of man much before the beginning of the historic age and in the entire extent of the ancient world, t the dog as an art type has no country. As for the ape, Greece knew him only by hearsay, or rather by his image that it found on the monuments of Egypto-Phoenician industry. The Egyptians derived the ape from Ethiopia; they had consecrated it to Thoth, and thus had made a place for it in the paintings in which were represented the scenes of their worship. On the other hand, one does not know where to seek the origin of another motive, the screech owls that alternate with disks as pendants. That bird is not one of those utilized by the oriental ornamentist as m motives of decoration; nor does it from a part of the repertory of the ceramic painters of the Dipylon; on the contrary, Grecian art of the classical age had a certain predilection for it.

Ducks with expanded wings take the place of the screech owls in another jewel, which has for principal ornament a lion's head seen in front, which a stiff stem connects with another piece in the form of a boat (Fig. 108). Between the two is a space; the intermediate part has disappeared; it was made of a less resistant material, amber or ivory. Assuming it restored, one obtains an entirety that must recall the jewel that Egyptologists designate by the name of ægis (breastplate), a richly decorated plate at the top of which is shown the face of Sekket, the goddess with a lion's head.[1]

Note 1.p.241. Vol. I. Fig. 369.

One feels himself also no nearer Egypt, with two heads executed in relief, that form the ends of a metal band curved in half moon shape, from which are suspended light disks (Fig. 109) By the character of the lines and the arrangement of the hair, those heads resemble those of the ivory sphynx, that came from the northwest palace at Nimroud, and which are perhaps Phoenician. Inserted in the hollows of the metal, scales of blue g glass represent the arch of the eyebrows and the globe of the eye.

Several necklaces are made of gold beads, that alternate with beads of cornelian. Among the pieces that entered into the composition of one of these decorations is one curious ornament; it is a golden pear enclosed in an open hand (Fig. 110). In that pear is thought to be recognized a woman's breast, and one re-

recalls the gesture of Isis, who placed her hands on her chest, when she suckled Horus.[1] To that gesture, a symbol of fertility, the goldsmith is said to have alluded in creating this motive. We have difficulty in believing it. With the arrangement adopted here the gesture would no longer have any sense. The fingers would vainly press the breast, as the palm of the hand applied on the nipple would close the passage of the milk. There is a much simpler explanation. What the workman desired to represent is a fruit seized by its base by the hand that picks it, a fruit that would be a pear or pomegranate. Here is what confirms this conjecture; beneath each of these large pieces is another fruit, easily recognized. Nothing is more natural than to connect thus two objects of the same species to compose a unique ornament.

Note 1.p.242. A Mykenean treosure. p. 208.

Other necklaces have nothing to say, unless their gold beads placed side by side recall the beads of glazed faience, that abound in Egyptian tombs of the 10 th and 9 th centuries (Fig. 111). Note also that the bezel of one ring has the form of a notched shield, whose contour is the same as that of the shield that decorates the coins of Salamis and Beotian coins (Figs. 112) The shield with double notches appears to have been in use in ancient times among very different peoples. One meets with it both among the Heteans, the Mycenaeans and on the vases of the Dipylon. We do not know if the contemporaries of Herodotus and of Thucydider stell protected their arms with it; but the place that it occupies on the coins in questing suffices to prove t that there had not been lost the memory of the services formerly rendered by it. It does not seem that one could derive from the use made here of this type any indication, either of the p place of fabrication of these jewels, or of the date to be assigned to them. If one chanced to solve this double problem, it is not by depending on a certain isolated peculiarity, but by considering the entirety of the observations given by those finds, that have seemed most worthy of attention.

The first question proposed is that of knowing if these jewels all have the same origin, and in case of an affirmative reply, what is the workshop that produced them. On the first point, we believe that one cannot hesitate. Doubtless no two jewels are alike. The motives vary in all; but they no less have a common

character; where they are not in the pure Mycenaean tradition, where the art is inspired by themes familiar to Egypt, Phoenicia and Assyria, the imitation is always at some distance from the model. Finally, the same materials are everywhere employed, with the same procedures of execution. These ornaments are from a single source; they come from the same workshop. Shall we s seek that workshop outside of Greece? But in that case, what we must find in the decoration of these jewels would not be a vague reflection of the style and taste of the arts of the Orient; we should recognize, as if by its mark of the workshop, certain of the exotic industries whose products were carried by Syrian merchants to the shores of the Peloponessus; finally, we do not find these Mycenaean elements that we have mentioned. All these jewels are indeed the work of Gracian coldsmiths, and probably of one establishment at Egina. One knows what was the naval power and the commerce of Egina in the 7 th and 6 th centuries, what position its merchants held at Naucratis and the Delta, and with what beautiful monuments they ornamented their island on the eve of the Median wars; but this prosperity appears to date back in the past beyond the time when history commences. Egina was marvellously situated in the middle of the Saronic gulf, between the coasts of Argolis and those of Attica on the route to Corinth. In verses not to be taken literally, but which no less evidence the reputation enjoyed by the mariners of Egina, one of the poets whose works collected under the name of Hesiod, attributed to the Eginetans the honor of having been the first to "provide the ship with sails, the wings that make it slide over the waves."[1] Excavations have brought to light at various points of the island fragments of vases, some of which belong to Mycenaean pottery, while others appear contemporaries of the pottery of the Dipylon.[2] In those with very unusual forms is believed to be recognized the products of local workshops.

Note 1.p.244. Hesiod. Catal. Frag. 96. Edit. Kinkel.

Note 2.p.244. Stais. Ephemeris. 1895. p. 241,262,263,Pl.12.

It is more difficult but perhaps not impossible to arrive at a probable conjecture concerning the age of these jewels. To a about the 9 th century we refer some relations that can be established between certain details of the work on these jewels a and the oriental models that passed under the eyes of the Greek

artist; but what is more significant is the fact itself of these borrowings. They are numerous and their sources are different. One divines that from the appearance of the Achaian states of Crete, of the Peloponnessus, of Attica and of Beotia, the Syrian ships more freely frequented the seas of Greece, and that the decadence of Grecian industry gave more vogue to the types of which they are the propagators. One sees the moment approach, when after the disappearance of the Mycenaean style and the rectilinear geometrical style that succeeded it, before developing its full originality, the Greek ornamentist placed himself at the school of the arts of the Orient as a docile and curious pupil. But on the other hand the workman has not yet forgotten the forms and motives of Mycenaean art; but he reduces those forms and simplifies those motives. Then otherwise an entire portion of the repertory of his predecessors, the most singular, that he seems to have repudiated. If he still amuses himself with the play of spirals, he no longer demands anything from the fauna and flora of Grecian seas; here are neither scrolls of algae, nautilus, nor cuttle-fishes with long wavy arms. One feels himself in presence of an art that survives in itself, that is not dead, but whose days are counted; this is the end, and one can almost say, that this is the tail of a style and of a tradition. However, all enfeebled as may be this tradition, it still persists, and that persistence suffices to warn us that with these jewels we cannot be very far from the time, when the Dorian invasion commenced to trouble the Achaian world. To fix approximately the date of fabrication of the objects composing the treasure of Egina, we should incline to go back to the 10 th century, or in any case to not pass the first half of the 9 th.[1]

Note 1.p.243. Evans comes down a little later; he places the fabrication of those jewels at about the year 800.

By this find we shall then have an idea of the style and the taste that must have reigned in Greece during the first half of the period in which our researches extend in the districts that the war had spared most. On the contrary, the art of the closing 9 th century and that of the 8 th century, the art contemporaneous with the most advanced potteries of the Dipylon, that we recognize in the plates of gold ornamented by stamped designs, which have been found in many necropolises of Greece and

particularly in the tombs of Ceramicos at Athens. These were diadems that enclosed the heads of the dead, or bands that on the funerary bed served to support the chin.[2] The ornament with the space occupied by chevrons, frets and the flyfot cross, is there conceived in the spirit of the rectilinear geometrical style. As on the vases, the fret encloses the figure, that of a man and an animal. There are subjects of pure fancy, whose theme is borrowed either from Mycenaean intaglios, where they are already found, or from oriental art, that also furnishes the model; this is a man overthrown between two lions (Fig.113); there are also stags pursued and attacked by lions (Fig. 114).[3]

Note 2.p.245. On this use of bands of gold, see Wolters. Ein griechischer Bestattungsgebrauch. (Athen. Mitt. 1898. p.267-371).

Note 3.p.245. This diadem was acquired at Athens by Piot. It had just been found in a tomb of Ceramicos.

The theme is everywhere very simple and purely decorative; but on others of these bands the goldsmith, like the ceramic painter, attempted to reproduce scenes more or less directly taken from real life; Here is a band that came from Athens, and that seems to represent a festal procession, the bringing of a sacrifice; one sees represented there the horseman, armed men that march in line with cadenced steps, women, men that carry a victim and the knife with which he will slay it. A curious detail is the presence of centaurs in this procession; of these monsters, some have the front legs like those of horses, the others like those of men (Fig. 115).[1] Elsewhere on the bands discovered at Athens, one is present at battles' among the combatant are centaurs, who either contend with each other or against men.[2] On another diadem figure the sphynx and the griffin; they have on their heads that sort of plume falling from behind, that Mycenaean art already gives to those monsters.[2] A sign of the times is the part here given to these artificial types. The mind of the artist begins to be nourished by myths developed by poetry, myths in which is played a great part by all those composite beings, some of which have been borrowed from the Orient by Greece, while others appear to be the real children of the Grecian imagination.

Note 1.p.246. Furtwängler. Archaischer Goldschmuck.(Arch. Zeit. 1884. p. 99-114. pls. 8 and 9.

Note 2.p.246. The same. Pl IX, 1.

Note 3.p.248. The same. Pl. X, 1.

As for the style of these jewels, it remains very inferior to that of the masterpieces of Mycenaean goldsmith's work. There is nothing, that for the art of composition and especially for the bold freedom of the touch, is even afar comparable to the cups of Vaphio. Here the image is obtained by the pressure exerted by the hammer on the sheet of metal, that it forces to enter the hollows of the mould. With whatever care this operation was performed, one could thus obtain only outlines without firmness, and were again softened later; the sheet of gold is too thin to resist the least shock. To ornament the entire band, it is further necessary to apply it several times to the mould, in which was cut a motive, that was repeated as many times as the piece to be decorated required by the length of the plate; now the connections were generally executed with a certain negligence; here the figures overlay each other; there is too great an interval between them. Finally, the mechanical character of the procedure suffices of itself to explain the mediocrity of the work. The fabrication of the stamped bands was an industry rather than an art. Bands stamped by means of the same matrix are found in different tombs at Ceramicos.[1]

Note 1.p.247. Athen. Mitt. 1893. p. 127.

There is then here a difference between the work of the ceramic painter and that of the goldsmith, that may be as marked as that which struck us, when we were writing the history of Mycenaean art. The goldsmith has not advanced much; this is perhaps because he is no longer the servant of the king and the purveyor of his luxury; if he does not labor for the multitude, but at least for all the wealthy. What these require from him are jewels containing little material, that serve t the purpose without costing dear. There is then a very sensible analogy between the figures of these gold plates and those of the vases of the Dipylona The same alteration and reduction of the living form; the same angular drawing that comes from habits contracted in the school of geometrical decoration. Yet it seems that the fabrication of the goldsmith may be a little less dry and hard than that of the painter. With him the poses have more variety; the general proportions of the body of the man are better observed. The drawing of the trunk and the members, although still very summary, yet is more round. One cannot

find on any vase of this period animals that equal those of one of the diadems (Fig. 115). If the lions remain with an entirely conventional rendering, the stags are supple and have a very correct movement.

F.om the point of view of taste and decoration, what establishes a closer connection between the arts of metal and those of clay is the brooch, i.e., the safety pin or clasp that serves to drape the fabric, to fix its folds, and to connect its edges. Under the simplest form, the brooch is composed of a pin or tongue, of a body more or less round, to which the tongue is fastened at top, and a notch, ring or hook, in which that body ends at its lower end. If the tongue be engaged in the hook, the desired connection was made' the piece could no longer move.

Men have occupied themselves much with the brooch in the last years. A list has been made of all layers in which it is found; there have been described all forms taken by it in the course of the ages in different countries.[1] The results from these researches is, that neither Chaldea, Assyria, Egypt nor Phoenicia knew the brooch, and tha it made its appearance in Italy among the peoples of the seacoast of Italy, as well as in the valley of the Po, and in Greece about the end of the Mycenaean period. Several examples have been found at Mycenae, but in very small number, and only in the more recent deposits.[1] On the contrary, one certainly meets with it in the tombs of the period that opens by that invasion, and thenceforth we find it everywhere, as well in central Europe as among the coastal inhabitants of the Mediterranean.

Note 1.p.248. As a substantial summary of all these researches, see the article Fibula by Salomon Reinach in the Dictionary of Daremberg and Saglio. One will find there a very rich bibliography. We shall limit ourselves to citing the works of a nature to interest us most, en the seuse that they relate more particularly to the history of the brooch among the Greeks and among the peoples from which they could have borrowed it.

Undset. Sur les plus anciens types de fibules et les fibules de provenance grecque. Zeit. für Ethn. 1889. p. 205-234).

Studniczka. Zur Herkunft der mykenischen Cultur. (Athen. Mitt. XII. p.8-24).

Bohlau. Beschreibung der Bronzen aus den Beotischen Graben. (Jahrb. der arch. Inst. 1888. p. 361-364).

De Ridder. Catalogue des bronzes de la Societe archaeologique d'Athen. p. 55-61.

P. Wolters. (Ephemeris. 1829. p. 232 and pl. 11).

Helbig. L'epopee homerique. Chap. VI. p. 105.

Collignon. Note sur des febules beotiennes a decor grave. (Memoires de la Societe nationales des Antiquaries. Vol. LV. 1896).

Note 1.p.249. This rule seems to admit of some exceptions, but which if more closely observed do not appear to weaken the principle stated here. M. de Luschan has discovered in the British Museum several brooches of a very peculiar type, that come from Nimroud; but those objects are not earlier than the year 800, and it remains very probable that their model was brought from the West. (Verh. der Berl. Anthr. Ges. 1892. p. 287).One can say as much of the brooch that the chisel of the sculptor has represented on the breast of a god at Ibriz in Cappadocia. (Histoire de l'Art. Vol. IV. p. 724, Fig. 354). This rock-cut relief is also probably later than the time when the brooch b become in general use in the West.

It is then very probable that the use of it was introduced into Greece by the tribes that penetrated there by following the chain of Pindus; but on the other hand, it is proved that the same very simple types of brooch are found both on the one hand in central Italy, and on the other at Mycenae, Olympia, Cyprus and Camisos. Is not the fact of that resemblance significant, one might almost say of that identity? Does it not give reason to think that the Dorians and the Italiots already possessed the brooch, when they started toward the South? Both carried it with them in their migrations, and during the longer or shorter time, they retained for it in their new residences the forms in which, they had received it from their fathers at the time of their departure. Central Europe would thus be the true native land of the brooch, the country of its origin.[2]

Note 2.p.249. Studniczo admits that the brooch originated in a region farther south than Greece, and that the latter received by the route of the Balkans, while other tribes coming from the same region as those that peopled the shores of the Egean sea, carried the brooch into Italy (p.19); but he believes that it already fastende the clothing of the Achaians, Eolians, and Ionians, that fled before the Dorian invaders. Since on the o

other hand, he does not find it at Mycenae, he concludes from this that the Mycenaean civilization is the civilization of the Achaians; but it does not appear possible to prove by the circumstances of discovery, for any of the brooches cited by Studniczo, that it dates before the Dorian invasion.

Everything accords in confirming this conjecture. If one goes back by the aid of funerary deposits into the history of that tribes that remained established on the Danube and its branches, one finds the brooch included in the equipment at their disposal. It is further easy to comprehend that the need of na having recourse to it must make itself felt rather in the mountainous and cold region, that extends north of the Alps and t the Balkans, than on the banks of the Nile or the Euphrates. In Egypt, Syria and Chaldea, among people of the lower class, the costume was frequently reduced to cotton drawers, that were retained by the projection of the hips; when it was complicated among the rich and the great, it again comprised only fine linen fabrics, wrapped around the bust, to which one sometimes added a woolen mantle thrown over the shoulders; but where winters were long and summers were late, where even in the fine season the temperature was changeable, clothing was required that was warm not only by the material of which it was made, skins of animals, felts of hair or fabrics of wool, but also by the firm connection of the different parts, a connection that according to the case could be made by sewing or by means of brooches, and the latter best lent themselves to allow the modification of the costume; with them one at pleasure gave it more looseness or drew it closer around the body. They were too convenient in use to be renounced, even when one could rigorously do without them; but as the taste for luxury awoke among the peoples that used the brooch, its forms were diversified, and they were charged with ornaments. There were brooches made of gold or of silver, ornamented by fine stones and ro-round pieces of amber. Men tended to make of what had been at first only an instrument, a jewel more or less elegant, more or less richly decorated.

That tendency already manifested itself in a very sensible manner in the course of the period that occupies us. Henceforth, according to Homer, there were brooches where the precious metals entered into their fabrication, that which fastened the

garment of Ulysses was a jewel of great value.[1] The tombs further yielded nothing of that kind, particularly in Greece; all the brooches of that epoch that came from them are of iron or bronze. Why these pieces are curious is, that the decoration there bears the very clear impression of the style, whose elements seem to have been introduced into Greece by the Dorians and the tribes that accompanied them. Between the brooches and the clay vases are closer relations than between those vases and the jewels of the treasure of Egina, or from the tombs of the Dipylon. This is such, that when we sought to go back to t the origins of the style, that in Greece we have seen replace the Mycenaean style, we have been brought to ask ourselves, if it was not in the works of metal brought by the immigrants, t that the ceramic painter found the principle of the new system of ornamentation, that he commenced to apply after the Dorian invasion.[1] These objects are scarcely represented today in the yield of the excavations made in the soil of Greece but only by the brooch alone; that merits for this reason to be the object of very particular attention.

Note 1.p.250. Histoire de l'Art. Vol. VII. p. 9, 232.

Note 1.p.251. The same. Vol. VII. p. 204.

For us the form of the brooch has le s importance than its decoration; then will suffice some bried indications on that subject. We shall occupy ourselves here only with types represented in Greece. It is necessary to seek in special works the lengthy nomenclature of the varieties, that they present among the most ancient inhabitants of Italy, Etruria, among the Romans and in the Caucasus, at another extremity of the world known to the ancients.

The type that is regarded as the most ancient is characterized by the arc and the tongue, also by the presence of a single scroll; that is what we have found at Mycenae, and that one also finds in the shore lands of upper Italy and in other parts of the peninsula.[2] The type that then comes in the probable order of development is that termed a simple arch; it differs f from the preceding by the semicircular form of the arc, that is almost always decorated by parallel lines (Fig. 116). This type appeared not only in all Italy and in the peninsula of the Balkans, but on the coast of Asia Minor and in the most ancient c cemeteries of the Caucasus, particularly at Koban. The Greek

brooch is made more complicated in two ways. Sometimes the arc is decorated by enlargements or beads (Fig. 117); sometimes the plate is enlarged and receives line engravings. These brooches with large engraved plates are scarcely found except here in Greece (Fig. 118).

A form that especially belongs to Italy is tha of a brooch in the form of a boat, also termed the form of a leech; it is characterized by the very strong middle enlargement of the arc, which is sometimes hollow inside. Some examples are also found in Greece; such have been met with at Olympia and Dodona (Fig. 119). In a variety of this type the arc is decorated by lateral projections, sometimes by figures of birds (Fig. 120). That is the case of a brooch from Camiros, that we have already published, and that would have been bette in its place.[1] There is finally the brooch whose arc is decorated by a double series of spirals, a type mentioned in Greece, Italy and North of the Alps. (Fig. 121).[2]

Note 1.p.252. Histoire de l'Art. Vol. III. Fig. 596.

Note 2.p.252. Bohlau in Johrbuch. 1888. p. 382.

Among these brooches, there are some where the geometrical ornament appears in its most primitive simplicity under the form of spirals coiled on themselves, grooves and parallel bars, or chevrons and concentric circles. (Fig. 122). Elsewhere appears inscribed in a circle (Fig. 123) or isolated (Fig. 124) that star composed of four leaves in cross shape, that we have found on the vases. The leaves, if it be proper to give them this name, only occasionally resemble true natural leaves; then are absolutely regular. Here as on painted pottery, the first image of a living being that comes to vary the monotony of this decoration is that of the duck. One finds it on the brooches of very archaic manufacturr in Italy as in Greece, either sculptured in relief or engraved, sometimes beside motives purely l linear (Fig. 124), sometimes with men or large quadrupeds (Fig. 118); it also is on the brooches with broad incised plates, in that evidence an art more advanced. These are particularly curious; one finds there the same subjects as on the vases of the Dipylon or analogous subjects. The character of the drawing is entirely similar. The arc is there formed by three or four juxtaposed shells, the last of which is connected to a strong and slightly curved stem parallel to the plate. From the other end

of this plate starts the head of the pin, which is connected by a double spiral spring (Fig. 125). One of the plates has three fishes for the decoration of one side (Fig. 126), and for the other a fylfot cross (Fig. 127), motives of which the ceramic painter made frequent use. On another brooch of the same type, the themes are more complex. One of the faces represents a horse with lowered head, as if feeding; below is a star and a bird, a goose with wings extended (Fig. 128). On the reverse is a ship, above which on each side of the mast are represented two birds placed symmetrically. Beneath the broken line of the waves two fishes swim to the right. (Fig. 129). The combination of these two motives, the horse and the ship, on the two faces of the same plate is not rare, and more than one vase has presented to us the type of the grazing horse and that of the ship under sail, with the fish or the bird as filling. (Figs. 48, 49). On one of the faces of the third brooch is the scene of a combat. Two warriors are fighting, and between the two is a small personage clad in a robe, doubtless a woman, that makes gestures and lamentations. (Fig. 130). We have already found this duel on the vases, as well as the same helmet and the same round shield (Figs. 58, 63, 67).

The subject figured on the reverse of the plate was not yet shown on either in ceramics or on bronze. In the left angle of the panel is engraved a star; in the right angle is a segment of a radiating disk. On the field two persons stand in an attitude of adoration. They are clothed in robes whose ornaments are indicated by lines forming lozenges. The two persons of indeterminate sex face each other in a heraldic attitude, each raising an arm, their hands joining on a stem charged with leaves, that they seem to touch with a gesture of respect. Beneath the stem is a disk surrounded by a zigzag decoration representing rays (Fig. 131).

One cannot doubt the meaning of this scene; the Beotian engraver has awkwardly represented a theme, that is one of the commonplaces of oriental art, and not ignored by Mycenaean glyptics, the adoration of the tree or sacred plant;[1] the presence of the stars in the field fully reveals the origin of the theme. We have also seen appear on the more recent vases of t the Dipylon certain motives, unskilfully borrowed from Phoenician wares, where nothing connects them with what surrounds them;

(Figs. 66, 96, 97); they announce the influence that foreign models will soon exert on the Greek artist.

Note 1.p.255. Histoire de l'Art. Vol. VI. Figs. 428-18).

Another brooch from the same source presents with a curious variation, several motives that we have already met with (Fig. 132). The horse is surrounded by birds and quatrefoils, and is accompanied by her colt.

Not alone by the choice of motives does the decoration of th these brooches appear contemporaneous with that of the antique pottery, but also by the analogy of the style. On the plates is the same angular drawing as on the vases, the same unnatural reduction of the waist above the hips, the same elongation of the entire figure, the same projection of the calves. This thinness of the body, that contrasts with the breadth given to the muscles of the thigh, is found in the horse. It is the same procedure in the drawing, the artist does not fail in seizing the characteristic traits of the different types that he reproduces; but when he desires to render them, he exaggerates and deforms them.

The most ancient and simplest brooches, as well as other works of the same kind in metal, in our opinion, must have contributed to suggest to the ceramic painter the idea of the decoration that admits no element borrowed from the world of life; but the brooches with ornamented plates no longer belong to that first age. Those of known source were found with vases and other objects of a style already advanced.[1] We have seen what place the figure held; now there is no trace of that in the monuments, where we have sought outside Greece the prototypes of the rectilinear geometrical style. Finally, what are significant are the motives of Aryan origin that make their appearance here. When the engraving of these plates had been executed, the same style, that tended to emancipate and extend itself, prevailed both in the workshops of the ceramist and of the bronze-worker.

Note 1.p.256. According to Pohlou, the great brooch of the museum of Berlin (Fig. 119) came from a Beotian tomb, which d dated at nearly the same times as the tombs, where were found vases that we regard as already no longer belonging to the period, whose history we have just written.(Jahrb. 1888, p. 352).

This style is that of a beautiful tripod that we have already shown with the bronze urn for which it served as support (Fig.

(Fig. 2); but to appreciate the elegant and careful execution, it is necessary to see it entirely separated from the upper part.(Fig. 133). Each of the three legs is made of a band of metal decorated by herring-bone ornament, which is found on one of the bone plates from the same source, that served as facings of wooden coffers. At the top of each leg is a double spiral wall, that recalls the volutes of the Ionic column. The crown resting on these legs is perforated; between two half rounds extend spirals joined together. The whole is in happy combination and proportions; by the appearance of the work one divines that this kind of furniture was then of current fabrication; it must have been much used as a support, almost everywhere in the house and in the temple. Its image appears very frequently repeated on the vases of the Dipylon (Fig. 8).

As for the arms, we have indicated what character must be presented by certain arms of luxury described by the epic poet; we have seen either these waifs from the wreck of Mycenaean civilization or the products of Phoenician industry. The excavations have yielded nothing, that even distantly recalls those masterpieces of the goldsmith or of the armorer. Judging them by the specimens that have been found in the tombs of the Dipylon, the arms in the 9 th and 8 th centuries would have been very simple. Then an accomplished fact is the substitution of iron for bronze; near the skeletons of the warriors one then finds only swords, spear heads and axes of iron. Nothing indicates that these arms may have had rich mountings, that the guard or the handle may have been covered by precious metals, ivory or even carved bone. As for the forms, they are almost identical with those of the preceding age.[1] An iron sword, whose point is lacking, in its present condition is 18.9 ins. long by 2.36 ins., where the blade is widest (Fig. 134). There are blades of daggers of the same metal and two types of axes. Some are rectangular; they terminate in a shank that fits in a wooden handle (Fig. 136). Others have two edges; at its middle the iron is pierced by a hole into which is fixed the handle of the weapon (Fig. 137).

Note 1.p.257. Dümmler. Zur Nekropole om Dipylon und dem Styl der Dipylonvasen. (Athen. Mitt. 1888. p. 284-308). Brückner and Pernice. Ein attischer Friedhof. (Athen. Mitt. 1893.p.107-108).

Not the least fragment of shield or helmet, no trace in the

tombs. If one can hope to fill that lack, it is by the comparative study of the information on the subject furnished by the epic poems, and by that derived from the images of warriors, that ornament many works of the ceramist and of the goldsmith. The conclusion reached in that way can be formulated thus; the defensive armor that the poet attributes to his hero is also that represented by the vases of the Dipylon, and it does not sensibly differ from that in use in the course of the preceding period. Not without surprise does one verify the long persistence of a very primitive mode of arms, that while ensuring to the body of the soldier only a very imperfect protection, requires an extraordinary display of strength and suppleness. Yet force is in evidence; the researches of several scientists have have already led men to suspect that truth, but it has been placed beyond doubt by the critical labors of Wolfgang Reichel.[1] During a sojourn of two years in Greece, he examined one by one even to the least remains of Mycenaean antiquities in the museum of Athens, and made a complete catalogue of them. These monuments emphasized to him the true senses of the verses, that were often badly understood by the ancient commentators, who lacked the knowledge of things of the distant past. Thus he arrived at forming an idea of the nature, form and use of arms that the poet assigns to his heros. See in wha terms in the beginning of his Memoir, he summarizes that long investigation, that he conducted with rare sagacity.

Note 1.p.258. W. Reichel. Ueber homerische Waffen, archaeologische Untersuchungen, mit 55 Abbildungen im Texte. 8. 152. Vienna. 1894. The views of Reichel are accepted in general by one of the men best knowing Mycenaean antiquities, Maximilian Mayer (Berlin Phil. Woch. 1895, Nos. 16, 17); he only makes r reserves in certain details. Solomon Reinach also shares the same opinion. (See his Article in the Dictionary of Daremberg and Saglio).

"The chief part of the defensive armor in the epic age is the great shield, that shelters the person of the combatant, which we have learned to know from the Mycenaean monuments. The warrior's body was covered by this shield from the top of the chest to the knees. He carried it by means of a strap that rested on the left shoulder; by the aid of that strap and a crossbar placed behind the protection, he moved and handled it. By reason

of its particular form, it was not only in front that this shield protected him, who was equipped with it; his sides were also defended more or less effectively. Thus the shield in some fashion performed the function of the cuirass. In the proper sense of the word, the cuirass only appears in the most recent parts of the Homeric poems. Much before it came into use, the "mitre" already ensured to the abdomen the protection of a plate of metal directly applied to the trunk. The "zoster" or leather belt also plays the same part in a certain measure; but it especially raised the tunic in a manner, so that in battle it did not restrict the movements of the body. No more than the cuirass, did the heros of the epic poem yet know the metal greaves, that later enclosed the shin and knee of the Greek hoplite; their invention is much later. What they wore were half boots of leather or cloth, with sufficiently high legs; they were necessary to prevent the bones of the leg from being hurt or bruised by the lower edge of the great shield. Men did not yet use a helmet with visor to cover the head; what took the place of that was a helmet in form of a bonnet or skull cap, that protected the top of the head; it was more frequently made of leather than of metal."[1]

Note 1.p.259. Reichel. Ueber homerische Waffen.

In what concerns the shield, the monumental tradition accords with the statements of the two poems. On the vases of the Dipylon that appear most ancient, one finds that a single shield, which the painter equally gives to the foot soldier, to the drivers of chariots and even to the rowers, who in danger of arrows propel the ships of war. (Figs. 7, 63, 66, 67). This is indeed still the Mycenaean shield; like that, the shield of the vases is very high and very broad. Leaving both hands free, one divines that it was carried by being suspended from the neck by a strap; it covers the entire bust from the shoulders to the bottom of the thighs. What caracterizes it is, that the lateral notches here appear much deeper; but that difference is perhaps less due to even the form of the model than to the procedure of the draftsman. To make more apparent the effect of the doubled notches, he exaggerates their depth, as he does the projection of the muscles of the calf and the arm.

About the end of that period, probably in the second half of the 8 th century, a change is produced as shown by the painting.

The begin to use a round and smaller shield attached to the left arm by a handle (Fig. 58). On a fragment that came from Athens, there are for three warriors as many different shields, two of which reproduce the two typical varieties of the Mycenaean arm, while the third is already that of the Greek hoplite. (Fig. 138). One reaches the moment when that hoplite is completely armed and makes his appearance in sculpture. From the first years of the 7 th century appear to date the oldest of the vases, on which this type is shown with the very particular traits, that will not cease to characterize it thenceforth.[1] As for the cuirass, it is not drawn on the ceramic works of the Dipylon. Greaves are often indicated on the monuments of Mycenaean sculpture and of painting;[2] if one does not find them on the personages that decorate the vases of Athens, this is because there the entire body is detached in black, from the ground, and there is no place for indications of that nature.

Note 1.p.260. For example on the beautiful vase from Melos belonging to the museum of Athens, and which was formerly published by A. Conze. (Melische Thongefasse. Pl. III).

Note 2.p.260. Histoire de l'Art. Vol. VI. Figs. 369, 370, 439; Ephemeris. 1887. Pl. XI; 1891. Pl. III-2.

The Homeric helmet is that which we have found at Mycenae, Tiryns, Menidi and Spata on statuettes of bronze, ivory busts, engraved stones, vases of clay or of metal.[1] Whether the helmet be furnished with a plume or crest, it is only a sort of skull cap or conical bonnet (Figs. 139, 140). It has neither cheek nor nose pieces, or visor; it always leaves the face uncovered. In the paintings of Attic vases, the helmet only reveals its presence by the plume surmounting it; in the contour the head-dress is confused with the head on which it is placed (Figs. 7, 58, 67, 98). Yet here is a fragment on which the details are very clearly distinguished (Fig. 141). Provided with a crest, the helmet seems to descend very low on the brow and the nape; one asks if it be not already provided with a nose-piece. The profile is already almost that of the helmet with visor; one feels himself in the period of transition between the old and new equipment.

Note 1.p.261. Histoire de l'Art. Vol. VI. Figs. 353, 354, 355, 365, 421, 428[6]).

The conclusion suggested by these remarks has been already

divined. The defensive arms that the artists of the 6 th and 5 th centuries gave to the heros of the Iliad and of the Odyssey in the paintings of their vases, differ greatly from those borne by the ancestors and contemporaries of the epic singers. In their manner, these artists were as far from historical truth as Flaxman has been among moderns, when in compositions that were for a moment in vogue, he represented the same heros of the epic poems as going naked to the combat. The warriors that the epic poets had under their eyes, and which they placed in the scenes, were not those of the "men of brass,"[2] Ionians and Carians, who will give Psammeticus the empire of Egypt. Their equipment was still that used by the men of the preceding age, which in fact was but one important piece, the great hollow shield almost as high as the body, all the rest, greaves and helmet of leather more or less covered by metal, the bronze belt playing only a very secondary part in the work of protection. During two or three centuries after the Dorian invasion, the Grecian world was too much agitated, too profoundly troubled for it to change much in the arts of war as in those of peace; men rather lived on the legacies of the past. Later, when the later ethnic elements were mingled with the ancient ones, and there was created a new Greece, an industrious producer and adventurous colonizer, the genius of invention awoke, and to put itself in condition to contest with advantage against peoples, who had over them the superiority of numbers, the Ionians first adopted the armor and greaves, cuirass, shield and bronze helmet. Did the Ionians borrow these new arms from the Carians, as ancient tradition affirms?[1] It matters little; one can be certain, that if the Greeks of Asia Minor derived from their neighbors the principle of the new equipment, according to their habit they have failed to modify and perfect the arrangement and use of the pieces composing the armor. Their example was always followed soon; but the use of that armor began to extend only about the end of the 8 th century at earliest; it did not become general and the regular equipment, the distinctive mark of the Grecian hoplite till in the course of the 7 th century. It is then to confound the epochs and commit an anachronism to attribute it to the hero of the epic poem.

Note 1.p.262. Herodotus. I, 171; Strabo. XIV. 2-27; Plutarch. Artaxerxes. 10.

Also the technics of metallurgy appear to have remained stationary during this period; there was even a loss of certain secrets of the trade. By means of li tle rivets, the Mycenaean goldsmith fastened together the pieces of silver, copper and bronze, that composed his works; but he knew how to solder gold on gold.[2] On the contrary, in the jewels contemporaneous wi- with the vases of the Dipylon offered no trace of soldering, a and Homer nowhere alludes to that process. nails of gold or silver alw.ys serve to fasten the metal on sceptres, on hilts and sheaths of swords, and on seats. The thrones of the gods are ornamented by overlays attached to the wood by nails of silver.

Note 2.p.282. Histoire de l'Art. Vol. VI. p. 590, 973-974.

Held in place in the same manner, ivory entered into the facing of seats, doors, keys, and doubtless of arms also.[1] It supplies the poet with comparisons; its color and appearance were familiar to his contemporaries.[2] Ivory was found in the tombs of the Dipylon (Figs. 21-25); but it was not found there in quantities comparable to what has been furnished by certain tombs of the preceding age.[3]

Note 1.p.283. Odyssey. XIX. 55, 563; XXI. 7.

Note 2.p.283. Iliad. IV. 141-145. Odyssey. XVIII. 197.

Note 3.p.283. Histoire de l'Art. Vol. VI. p. 414.

At Athens it is frequently replaced by bone, that was of less cost; of bone were made most of those carved plates collected in the excavations of the Ceramicos, the represent there the equipment of caskets and coffers formerly buried with the dead.

As for amber, that the Italiots and other peoples of the West so greatly prized, when the tastes of the Greeks were once formed, they do not appear to have made much use of it; its semi-transparency did not lend itself much more than glass to give the contour that clarity always so dear to them. The men ion of it is believed to be found in two passages where the poet describes necklaces;[4] but it is to be noted, that at least one of those jewels is given as the work of a phoenician jeweler. So far as I know, no amber has been found in the excavations of the cemetery of the Dipylon.

Note 4.p.283. Odyssey. XV, 460; XVIII, 295; Helbig. L'epopee. p. 342-343.

3. Fabrics and Clothing.

If in what concerns armor and the mode of fighting, the Homeric age continues during at least a long time the tradition of the Mycenaean age, it shows itself in other respects a bolder innovator. The tribes of the North brought it the brooch; the facilities afforded to it by the use of that fastening suggest for clothing arrangements, that would not have been possible without it.

We canno think of studying separately and explaining, as done elsewhere with much care and criticism, all the terms that in Homer designate the different fabrics and parts of the costumes of man and women.[5] All that we propose here is to define by some precise traits the taste, and what one may term the spirit of the Homeric vestments.

Note 5.p.283. Studniczo. Beiträge zur Geschichte der altgriechen Tract. Vienna. 1888. p. 143 + 47 figs in text; Helbig. L'epopee homerique. Chapters 11-15.

Henceforth the Greeks were acquainted with fabrics of both linen and of wool. The name of linen is found in Homer.[1] Further, the epithets that the poet has attached to many parts of the costume, that imply a light tissue of uniform and smooth appearance, have meaning only if they apply to cloth. Cloth alone can assume by bleaching and preparation that lustre, which seems to have been so much appreciated.[2] It was not otherwise by all the fashions that it received. There is reason to believe, that in certain cases it was plaited artificially by processes analogous to those, that today the Athenian peasant still employs for obtaining the gathers of his kilt. By the monuments of Egypt, Chaldea and Syria, we have the proof that the orientals liked thus to goffer cloth.[3] If the Greeks borrowed from them the use and even the name of tunic,[4] they must have taken from them at the same time the taste for this goffering. A fabric submitted to this manipulation is designated by the expression of "twisted tunic;" a prolonged twisting is one of the means employed thus to plait the cloth.

Note 1.p.284. Iliad, II, 529, 830; IX, 661; Odyssey, XIII. 73, 118.

Note 2.p.284. Iliad, XXII, 508-511; Odyssey, V, 230-231. Fabrics are compared to the sun (Iliad, XIV, 185; Odyssey, XIX, 232). The epithets "shining, shining like oil, and white," or-

arouse the same idea.

Note 3.p.264. Histoire de l'Art. Vol. I. Figs. 433, 434, 435, 462, 468, etc.; Vol. II, Figs. mel, 290, 296; Vol. III, Figs. 283, 302, 318.

Note 4.p.264. The same. Vol. VI. p. 490.

As for wool, preparing and weaving it was one of the principl occupations of the numerous female servants, that formed a part of every well kept house.[5] There were made of it rugs,[6] coverings of beds,[7] and mantles.[8] Wool also furnished the material of other parts of the clothing, for example of the peplos.

Note 5.p.264. Iliad. V. 113; XXI, 30-31.

Note 6.p.264. Iliad, III, 387-388; Odyssey, XVIII, 316; XXII, 343.

Note 7.p. 264. Odyssey, IV, 124.

Note 8.p.264. The same. I, 443.

The ordinary costume of men consisted of two pieces, the tunic (chiton) and a mantle most frequently termed "chlaina,"[9] but which also sometimes bears the name of "pharos". The verbs employed by the epic poets to indicate the act of putting on the tunic, give reason to think that this was a vestment that one put on as we do the shirt;[10] truly speaking, it was a shirt without sleeves. This vestment was of linen; and the Hebrew word from which "chiton" is derived is connected with the same root, and belogs to the same family as the words, which designate l linen and flax in several Semetic languages.[1] Epithets qualifying the tunic are further those, that only seem to us applicable to linen. Nowhere is there mention of a tunic ornamented by designs; all indicates that the chiton comprised no luxury other than the lightness of the tissue and the whiteness of t freshly washed cloth.

Note 9.p.264. Iliad, X, 133; XXIV, 646; Odyssey, IV, 50, 299, etc. The ordinary epithet of the chlaina is shaggy.

Note 10.p.264. Iliad; XVIII, 416; XXIII, 739; Odyssey, XV, 60, etc.

Note 1.p.265. Helbig. L'epopee, p. 205.

The length of the tunic varied with the occupations and the parts of those clothed with it. Various passages of the two po poems cause it to be understood, that warriors were clad in a tunic that did not even descend to the knee, while others imply one that falls to the feet and even drags on the heels.[2] To the

latter relates the epithet "draggers of tunics," which is given to the Ionians, both by the Iliad and by the hymn of the Delian Apollo.[3] It is probable that men distinguished thenceforth the short chiton, a vestment for combat, hunting and labor, and t the long chiton, one of peace and ceremony; the latter was the costume of old men, kings and most of the gods. The belt is often mentioned in the epic,poems as one of the elements necessary to the feminine costume, but is there mentioned only twice in reference to men.[4] Perhaps on errs in concluding from this that for men the tunic,was worn without a belt.[5] I shall explain this silence otherwise. Among women the girdle was placed over rich fabrics and was an object of ornamentation. For men being attached to the tunic without decoration, it was often only a cord, a band of cloth or of leather.[6] That use is supposed by the expression, "to gird himself." When one prepared to fight or to run, he drew up the bottom of his tunicl and to f free his legs, kept it there by the pressure of a cord.[7]

Note 2.p.265. Helbig. L'epopee, p. 205.

Note 3.p.265. Iliad, XIII, 685; Hymns, I, 147.

Note 4.p.265. Odyssey, XIV, 72; Iliad, X, 77.

Note 5.p.265. Helbig. L'epopee. 218-219.

Note 6.p.265. Yet the belt of Nestor is called party-colored.

Note 7.p.265. Iliad, XI, 15.

Men wore the tunic alone only in the house, or when engaged in violent exercise. To go out, they cast the mantle over the shoulders.[2] The mantle was of variable dimensions; there was the simple mantle and which was sufficiently ample, so that if one did not have to cover the entire body, it was folded, thus doubling the cloth.[1] As a difference from the tunic, the mantle was fastened at the neck by a brooch.[2] The wool was dyed a color; red and purple were preferred.[3] The fabric was often ornamented by designs, whose character is not clearly defined by the poet.[4] These ornaments were sometimes figures. On a "diplax" of its shape, Helen had represented the combats between Trojans and Achaians.[5] This could only be embroidered with the needle.

Note 1.p.266. Iliad, XXIV, 229; X, 134; III, 126; XXII, 440.

Note 2.p.266. Iliad, X, 133; Odyssey, XIX, 226.

Note 3.p.266. Iliad, X, 133; Odyssey, XIV, 500; IV, 115, 154; XIX, 225.

Note . p.266. There is no agreement concerning the meaning of

the expression that the poet employs with reference to a diplox with a ground of purple, whereon Andromache has scattered ornaments. (Iliad, XXII, 440). Hesychius and the scholiasts explain "thronon" by "anthen". Perhaps it refers to rosettes and palm leaves.

Note 5.p.265. Iliad, III, 125.

The mantle was worn by everybody indifferently, and men of hi high or low condition. The pharos was the mantel of kings. It must be much larger, for it usually received the epithet of great, which is never applied to the mantle.[6] There is reason to believe that the pharos was of linen; the poets designate by this term not only this mantle of men,[7] but also different pieces of cloth, such as swaddling bands,[7] shrouds and the sails of ships,[9] which can only have been made of threads. At least then less as a defense against cold, than as a vestment of luxury and state, frequently of a beautiful tone of purple.[10]

Note 6.p.266. Iliad, II, 43; VIII, 221; Odyssey, VIII, 84.

Note 7.p.266. Hymns. I, 121.

Note 8.p.266. Odyssey, II, 93-99; XIX, 138-145.

Note 9.p.266. Odyssey, V, 258.

Note 10.p.266. Iliad, VIII, 221; Odyssey, VIII, 84.

The skin of an animal at need replaced the mantle. Warriors wore the skins of a lion, panther or wolf; shepherds and peasants, skins of a stag, sheep or goat.[11]

Note 11.p.266. Iliad, III, 17; X, 23, 29, 177, 234; Odyssey, XIII, 438; XIX, 23.

The principal vestment of the woman was called in the epic poems "heanos" or "peplos"; the two words appear synonomous. This vestment was placed directly on the skin, this clearly results from several passages in which it is mentioned. When Hera thinks of fascinating Zeus, she washes her entire body with ambrosia and bathes it with perfumes. Then she is nude. After completing these preparations, she puts on the beautiful heanos presented to her by Athena; she fastens it with brooches at the height of the chest; then she buckles the girdle below.[1] No tunic, the heanos of soft tissue is applied on this divine body, which she has thus prepared to surprise and charm her spouse. When Pallas, before arming for the combat, drops to the ground her peplos to put on the tunic of Zeus, it is evident that the garment removed, corresponds in the feminine costume

to the tunic of the men.[2]

Note 1.p.267. Iliad, XIV, 170-181.

Note 2.p.267. The same. V, 230; VIII, 385.

The heanos and the peplos descend to the feet, as sufficiently indicated by the epithet "who trails her peplos," the use of which is very frequent. It was fashioned the bust by brooches; on the peplos that one of the suitors presented to Penelope were 12 brooches of gold. Finally, the peplos was most frequently colored, yellow like saffron, dark blue, red like fire.[3] Designs more or less complex are detached in another tone from the vivid tints of these grounds;[4] thus the peplos is often qualified by party-colored.[5] Now the color does not take so readily on linen as on wool. Then where polychrome fabrics are mentioned in those distant times, there is every chance, that those are of woolen cloth. On the contrary, if it concerns linen, there is an entirely different series of epithets, that one meets with, adjectives that boast of the whiteness of the fabric.

Note 3.p.267. Iliad, VIII, 1; Hymns, V, 182-183; IV, 88.

Note 4.p.267. The same. XIV, 178.

Note 5.p.267. The same, V, 735; Odyssey, VIII, 293; Iliad, VI, 289; Odyssey, XV, 105. See Iliad, VI, 294; Odyssey, XV,10?.

By the part it plays, by its mode of fastening and the material of which it is made, the Homeric peplos is then that with which were clothed, some centuries later, the women that served as models for Polycletes and Phidias. This was a vestment without seam and made of a rectangular piece of cloth doubled in the direction of its greatest dimension. The two edges are connected together above the shoulder and at the side by a series of brooches of unequal widths, and these allow the arms to pass at the top, which thus appear naked in their entire length, from which is the epithet "with white arms." Below the knee are more brooches that close the gap. In the movement of the step, the edges of the fabric separate and show the bottom of the leg. Several epithets allude to the beauty of the ankle.

As we have stated, the pharos was a linen tissue more flexible and more brilliant than any other. To kings, it is attributed by the epic poets to goddesses. In the pharos were wratted Calypso and Circe on leaving the bed.[1]

Note 1.p.268. Odyssey, V, 230; X, 543.

Over the heanos, the peplos or the pharos, the woman places a belt in dressing, which gathers this drapery around the waist. Sometimes it is of gold, i.e., formed of plates of metal laid on a band of leather,[2] and sometimes is ornamented by numerous fringes.[3] Those fringes must be tufts made of gold threads or of very thin sheets of the same metal, as found in a tomb at Mycenae (Fig. 192). It is probable that this ornament was of oriental origin; one sees those tufts hang from the belts of certain personages in the Assyrian reliefs.[4] The epithets "bathyzonas", euzonos and challizonos" indicate what importance was attached to the presence of the belt. Did the two last refer to the manner in which was arranged the belt or the more or less rich material composing it? It is difficult to say. As for bathyzonos, an explanation of it is given that is confirmed by the monuments.[5] This alludes to the very deep hollow that is made in the falling drapery by the very tight belt around the waist. The more marked is that hollow, the more slender seems the waist. The true translation of bathyzonos would then be; remarkable By the slenderness of the waist. We have stated the insistence with which the Mycenaean artist emphasized by exaggerating the reduction that the trunk shows above the hips.[1] A slender stature was then certainly regarded as a beauty. It continued to be so during the following age. That is what the poet had in view when he said, that Agamemnon had the head and eyes of Zeus, who pleased to launch the lightning, the length of the belt of Ares and the breast of Poseidon.[2] The same tendency is very apparent in the paintings of the vases of the Dipylon. Their proportions are much elongated; the peculiarity of form that we have indicated are found everywhere, among the men as well as the women. To female figures the compression produced by the belt contributed much to accent the effect of thinness sought by the designer.

Note 2.p.288. Odyssey, V, 232; X, 543.

Note 3.p.288. Iliad, XIV, 581.

Note 4.p.288. Histoire de l'Art. Vol. II, Fig. 205.

Note 5.p.288. Studniczo. Beiträge. p. 120-121.

Note 1.p.289. Histoire de l'Art. Vol. VI, p. 873.

Note 2.p.289. Iliad, II, 478-479.

If the heanos, peplos and pharos were undergarments like the tunic for men, the feminine costume further comprised a great

veil, that the epic poets call "chredemnon or chredemna, chalyptre and chalymma." The species of shawl designated by these three terms was usually placed on the back of the head, leaving the face uncovered, and hung on the back and shoulders.[3] One sees it worn thus on a relief of Sparta, that is one of the two most ancient monuments of Greek sculpture (Fig. 143). The women only cover the face when they desire to remain unknown, or to separate themselves from the world when mourning.[4] When women converse with men, the rules of propriety required them to half conceal the face wit the hand, the veil drawn on one cheek. That is the attitude that the Odyssey gives to Penelope when she shows herself to the suitors;[1] it is frequently represented in the archaic monuments. Coquetry lost nothing thus. That gesture by placing half the face in shadow only made the value of the rest greater, and gave a most graceful movement to the arms.

Note 4.p.269. Hymns, IV, 197.

Note 1.p.270. Odyssey, I, 334; XVI, 416 etc.

The headdress on which was placed this shawl was quite complicated, at least for women of high rank. What best gives the idea are the verses in which Homer relates how Andromache, when she learns the death of Hector, tears off all that she has on her head, to leave her flowing hair falling down her back. (Greek poem).

Note 2.p.270. Iliad, XXII, 468-470.

What Homer calls "gleaming ties" is the entirety of that headdress, where the gleam of the metal mingles with the vivid and varied colors of the fabric. The "ampyx" is a metal diadem similar to that, which in another part of the Iliad is termed "stephane" or crown.[2] the "credemnon" is the veil falling down on the nape; but what must be understood by the "kekryphalos" and by the "plecte anadesme?"

Note 3.p.270. Iliad, XVIII, 597.

Lexicographers do not give a precise definition of the "kekryphalos," and for a stronger reason they know nothing of the "anadesme." In the paintings of Etruria is found the mode of adjustment by which is best explained the mien and pose of Andromache, and the various terms grouped here by the poet.[4] th There are frequently seen women covered by a high and stiff bonnet, that entirely covers the head and only allows to be seen a narrow band of hair along the brow; it terminates behind

by a back much raised. On the front that headdress is sometimes enclosed by a metal diadem, the ampy (Fig. 144). Further, at the same place are one or several bands of cloth, and higher at the top of the head is a sort of cushion or fringe, which is both an ornament and a band (Fig. 145); the band is intended to fix in place the bonnet, which has no strings. A bonnet of the same kind and attached in the same manner was worn by the Ionian women, at least in certain districts. This arrangement was not in use everywhere; no mention of the kekryphalos is made in the very detailed description of the toilette of Hera;[1] the goddess appears to place the "kredemnon" itself on the head over the hair. The mourning of Andromache furnished t the poet with the occasion for recalling to his hearers the singularity of some local fashions and we should have to recognize in the fringe of the Etruscan monuments the plaited band. This fringe is placed on an elevated point of the headdress, which seems indicated by one of the elements, that enter into the composition of that substantive, by the preposition ana. Some have desired to see in the anadesme a ribbon, that is knotted in the tresses arranged as a chignon or in plaits. If this were so, considerable time would have been required to loosen the knots. On the contrary, with the interpretation that we adopt, nothing is easier to understand than the movement of Andromache. Her hand roughly tears off the veil, diadem, fringe and the bonnet that it retains. Under the act of her curved fingers, all is removed at once and falls to the ground.

Note 1.p.271. Iliad. XIV, 170-180.

Note 2.p.271. See the texts collected and commented on by W Helbig. L'epopee, p. 298-299..

There is something of the same research in the headdress of the men. A number of verses in the epic poets attest, that the epic period and Ionians of that time wore very long hair.[2] If this hair flowed freely over the shoulders, at least in certain tribes it was held by metal clasps. In reference to the Trojan Euphorbos, the Iliad speaks of his "curls retained by gold and silver."[3] What held those locks were spirals, made of metal wire in several turns, spirals of which numerous turns are found at Troy, in the tombs of Mycenae, in Beotia (Fig. 146), at Olympia and in Etruria. As for the beard, it seems to have been worn around the neck and long beneath the chin; with the upper

lip shaved as in the Mycenaean age.[1] The use of the razor was much extended,[2] and when Athena restores to Ulysses, transformed into a mendicant, his beauty as a hero, on his chin is developed a beard of a bluish-black.[3] Always is mention of the chin, when the poet speaks of the beard that grows or whitens; never is any allusion made to the moustache, for which the Homeric language has no name.

Note 1.p.272. Histoire de l'Art. Vol. VI, p. 812, Fig. 381.

Note 2.p.272. Iliad. X, 173.

Note 3.p.272. Odyssey. XVI, 175-176.

From all the preceding observations it results that the Homeric costumes already is no longer the costume of primitive Greece. That seems to have presented two different forms for men. In the tombs of Mycenae have been found in thousands leaves and rounds of gold, that must have been sewn on pieces of cloth. These overlays could have been placed only on very ample garments, that covered the entire body, on vestments like long robes and falling to the feet, in which several personages are dressed in intaglios of the Mycenaean epoch; but those are kings or priests that these images seem to represent, which are further quite rare.[4] The number is very much greater, where the nudity is almost complete, or the clothing is reduced to a sort of drawers. Those are ordinary figures, hunters and warriors in sculpture and glyptics.[1] Now that extreme simplicity of costume, which does not seem to suit the climate of Greece, does not one divine a remnant of the habits of an almost savage life, at least as a memory of the time before the industry was sufficiently developed, the body was hardened by long custom to bear storms, and rays of a burning sun in summer, with the rigors of the north wind in winter?[2]

Note 4.p.272. Histoire de l'Art. Vol. VI. Fig. 431,[4] pl. XVI,16.

Note 1.p.273. The same. Pl. XVIII, 1; Figs. 353, 355, 356, 369, 370, 421, 422, 428,[1] 426,[11,21] 431.[3]

Note 2.p.273. There is only one Mycenaean monument on which one can see the tunic; this is the vase that represents a file of warriors (Histoire de l'Art. Vol. VI, Fig. 497); it is worn by a woman; but is this vase really of the Mycenaean age? Would it not be rather contemporaneous with protoattic vases, with which it presents singular analogies? (Pottier. Rev. Arch. 1896-1897, p. 19-23)? The doubt remains, even after the discovery of

the curious fragment of a mural painting of Mycenae, published by Tsoundos. (Ephemeris, 1896, Pl. I).

In the time of Homer, the use of the tunic had become general; thenceforth among the Greeks it is the essential part of the masculine costume, and what does not seem debatable, considering the origin of the word chiton, is that the change was caused by the effect of relations made with the Semites. Seeing such a convenient garment on the backs of Syrian merchants, the Greeks learned to appreciate its advantages; to borrow it from them was a first advance. What remained to do was to give the tunic an elegance, that it could not retain in the thin and dry folds of linen. The classical age will provide for that by substituting wool for linen in making that shirt, and by skilfully utilizing the belt so as to make the fabric exposed and to arrange its folds.

It is impossible for men of the Mycenaean age not to have had something resembling the cloak; but then this must have been most frequently only the skin of an animal, and had no form peculiar to it and consecrated by custom. That special form is possessed among the Ionians, among whom the epic poets lived; it was called chlaina. How does the chlaina differ from the classical himation? The reply to that question is, that it is not to be asked from the monuments; we have none to cite contemporaneous with the epic period, and when art might be sufficiently advanced that the movement of the drapery was clearly indicated. Still one sees from certain words of the poet, that there was a difference.

As a general rule, the himation had no other ornament than a border, where the motive of the design was very simple, and that showed by its color on the dead white of the woolen; accordingly it lent itself to all arrangements. On the contrary, the chlaina was ornamented by rich and varied designs, an ornamentation that it was desired to show. If Helen embroidered a battle scene on a diplax, this was not to conceal it under the folds of the cloth. There is only one place where the picture traced by her needle could be well in view; that is the broad field formed by the cloth on the back, provided that it fell straight. Thus one was led to a symmetrical arrangement of the mantle, placed vertically over the two shoulders like a chasuble, and perhaps no other was known, while later there

would be many different ways of clothing one's self in the animation, fashions that change wit the age of the individuals, with their social position, and with the occupation to which t they were devoted.

The same observation is for the feminine costume. It differs very sensibly from that known to us by the figured monuments of the Achaian age' the adoption of the brooch changed its character. The peplos of the heroines of the epic poems plans the same part as that of the Athenian women of the 5 th century; there is the same cut and the same fastenings, but as indicated by the epithet bathyzonos, it is drawn closes above the hips, that suppresses or reduces the folds in the upper part of the garment. Besides, like the chlaina, the Homeric peplos is tinged with vivid colors on which play the ornamental motives of a color in a tone different from the ground, and here also they must desire that the eyes of the spectator should lose nothing of the design. That very natural wish led to simplifying the folds, which would not have failed to interrupt the development and effect of the decoration. Now to make prominent the forms of the body, to follow them and to clearly accent the principal lines, there are really only fabrics of a single color. That is because it will use only those fabrics, that the Greek costume in the best centuries of the art, will be especially that of the sculpture. Such as we represent it for the heros of Homer, it already has something of merit; but it does not yet have the elements that compose the entire part suiting them, and its fault is in its varied coloring on the one hand, and on the other in the reduction at the waist, that results from the mode of using the belt.

What is true of the peplos is likewise so of the feminine mantle. Under di ferent names given to it by the epic language, this seems to have been nearly always placed on the head, so as to cover the shoulders and back. It had no amplitude, and especially not the freedom of charm of the himation in which are wrapped the terra cotta statues of the classical age, with such charming fancy.

The headdress is also rather heavy; its appearance is complicated and formal. The contemporaries of Homer among men of high birth admitted abundant hair, which fell on the nape and on the sides of the face in long locks, often held in spirals of gold

of gold or silver; on the contrary, from the time when s statuary flourished, the sculptor well pleased himself by increasing short and thick locks closely pressed to the brow, temples and ears. It will be the same for the women. They will omit the bonnet. At most they will retain a light veil, that will cover only the back of the head; but most frequently for them will suffice a simple band to retain the hair, whose wavy mass will form a marvellous enclosure for the face.

In the structure of the high headdress that conceals the entire head, in the pleasure taken in vivid colors a and complex designs, in that seeking for a rigorous symmetry, that presides over the arrangement of the clothing and the hair, finally in the luxury of jewels that largely extend over the breasts of women, in all that gold mingled with the pendant locks of the men, there is a remnant, a still sensible trace of the Mycenaean taste and the oriental influence. At Mycenae was a passion for the precious metals, for jewels of all sorts, and from the Orient, Greece will always borrow the type of many-colored fabrics, when needed for certain uses, charged with embroideriesand very showy colors. Yet already a reaction is pronounced and other tendencies are manifested. If the heros of the Iliad are charmed by beautiful and richly decorated arms, one does not see that they have on the body any ornamen other than those spirals that enclose their hair, and one cannot affirm that all have recourse to that ornament. It even seems that they regard as unseemly for a warrior the custom of wearing jewels; we believe that is found the expression of this feeling in a verse of the Iliad, where the poet says of Amphimacos, a chief of the Carians, that "he went to battle with gold on himself, like a girl."[1]

Note 1.p.275. Iliad. II. 879.

Then they are already in the way, that must lead to the adoption of the simplest and noblest of all costumes, the Greek costume, such as we admire in the most perfect monuments of statuary. The principle is established; but many years are required to produce its effects. In the marbles and on the vases of the 7 th and 6 th centuries, the

headdress and drapery retain much of that complexity, vain sumptuosity and stiffness, that seems to us to characterize Homeric clothing; still from one generation to another, they are modified slowly but surely, in the sense that we have indicated.

We should have liked to comment on and to illustrate Homer, to invoke the figured monuments more frequently; but we could scarcely do so without referring to works, that are at least one or two centuries later than the epic period, and fashion could have changed in the interval. Thus there is a risk to run in the use of the later documents. One can only use them very discreetly. The only monuments that date in an epoch very near the time when the two poems were completed in Ionia, are the vases in the geometrical style; b but unfortunately the images thereon are too summary to satisfy our curiosity on the subject of costume; the painter has given the appearance of nudity to nearly all his personages of both sexes. Yet the clothing is sometimes indicated (Fig. 59). Now there on the rugs stretched on the funerary beds, there is not that diversity, that richness of decoration, that according to the descriptions of the poet, seem to have been presented by the fabrics that he had under his eyes. All that one finds in the clothing of women and in t the tapestries of couches (Fig. 6) is the chessboard design. It is further possible, that men did not then possess at A Athens the beautiful fabrics made by Ionia, with the help of models furnished by Phrygia, Lydia and Phoenicia. In the 9 th and 8 th centuries, Asian Greece was much more industrious and wealthy than European Greece. Its princes were masters of a fertile soil, enriched by overland and maritime commerce, and displayed a luxury not rivaled by the Eupatrides at Athens, who did not have the same resources. Attica had never been fertile, and there was yet only a marsh, where the port of Piraeus will later be opened to thousands of ships.

Chapter V. General Characteristics of Art during the Epic Period.

From Egean, Achaian or Mycenaean Greece, as one prefers to call it, to the Greece that was slowly constituted after the invasion of the northern tribes, there is a sensible retrogression, a momentary diminution of labor and wealth, as of art and industry. That prehistoric Greece that has been reconquered from oblivion, thanks to the discoveries of Schliemann and his emulators, had industrial centres, where under the protection of opulent chiefs and friends of luxury, there labored groups of artisans among whom the secrets of the trade were transmitted from generation to generation. The works that left those workshops were distributed not alone in all oriental Greece among congenerate tribes; they were carried by way of the sea even into distant countries.

The workshops of Mycenaean ceramists had in Egypt one of their principal markets; by the faith of the paintings of certain Egyptian tombs, it even seems that also sometimes the works of the goldsmiths of Mycenae took the same course. If there were a history of those societies or merely a poetry that reflected their image, Cnossus, Orchomenes and Mycenae would find themselves mentioned in the same chapter, as in the later history of Greece are Ephesus, Miletus, Chalcis, Corinth and Athens.

In the Greece of the 10 th, 9 th and 8 th centuries was nothing similar, to judge of it by the Homeric poems, the only documents that give any idea of the life of the men of that time. If there were countries then famous for the exceptional qualities of the products derived from them, those countries were all situated outside European Greece. By numerous traits one divines that the Greeks of that time experienced no embarrassment in recognizing the superiority of foreign industry. The swords forged by the Thracians are all the more appreciated.[1] Under the fingers of the Lydians, ivory loses its whiteness; it is tinted with purple.[2] Objects of price are brought from Egypt and increase the luxury of Menelaus.[3] The cuirass of Agamemnon, a marvel of art, is a gift from Kinyras, king of Cyprus.[4] It is particularly P Phoenicia, for the contemporaries of the poet, that is the

mother of beautiful works of every sort. Among the different cities, each of which must furnish its share of exports, Sidon was so eminent, that at a distance all the cities of P Phoenicia were confounded with it in the eyes of the Greeks. Sidon is a city rich in bronze,[5] and that where are most s skilfully wrought the precious metals, according to the evidence of the two crateras of silver that Phedimos, king of the Sidonians, presented to Menelaus, and the necklace of amber and gold that served them to amuse and deceive the women of the house of the prince at Syros.[6] What one no less admires are the products of the women of Sidon, unequaled embroiderers. The peplos that Hecuba offers to Athena as a gift worthy of a goddess, was ornamented by the women of S Sidon.[7] Men envied him, who like Clesios, father of Eumea, possesses a Sidonian female slave, who "knows how to make beautiful works."[8] If those objects, contended for by all that could pay the price, were distributed in all parts of the Grecian world, the Syrian manufacturer did not await at home the coming of purchasers; he went to them; he had the gift of ubiquity. In the course of his tales, Homer mentions the presence of Phoenicians in many places, in Egypt,[1] where they remained permanently, in Crete,[2] at Lemnos,[3] at Ithaca[4] and in the mythical island of Syros.[5]

Note 1.p.278. Iliad. XXIII. 560, 561; 807-808. It has been asked (Helbig, L'epopee homerique, p. 12), whether those T Thracian swords did not come from Phoenician works established at the foot of Mt. Pangea. What has induced us to reject that conjectureis, that Thracian civilization appears to have had its own originality.(The same, Chap.I). I should rather believe in a centre of metallurgical industry analogous to that mentioned to us among the Chalybes of Asia Minor. By the routes from the North came to that region the processes and practices of that industry.

Note 2.p.278. Iliad. IV, 141.

Note 3.p.278. Odyssey. IV, 125-132.

Note 4.p.278. Iliad. XI, 19-28.

Note 5.p.278. Odyssey. XV, 425.

Note 6.p.278. Iliad. IV, 615-619. See Iliad, XXIII, 745; Odyssey, XV, 415.

Note 7.p.278. Iliad. VI, 289.

Note 8.p.278. Odyssey. XI, 418.

Note 1.p.279. Odyssey. XIV, 288.

Note 2.p.279. Odyssey. XIII, 273.

Note 3.p.279. Iliad. XII, 745.

Note 4.p.279. Iliad. XV, 482.

Note 5.p.279. Iliad. XV, 415.

While the poet thus attaches the ticket to a certain foreign workshop on each of the wrought pendants mentioned for their high value, he does not take the same care with regard to the objects not of exotic origin. When it concerns arms, tools, jewels or fabrics, he does not indicate the source, which seems to indicate that the quality is everywhere nearly equal. A single time in regard to the shield of Achilles, he names the workman Tyches of Hyle;[6] yet we do not even k know if it be necessary to recognize as the native place of Tyches the little Beotian city, that later bore that name.

Note 6.p.279. Iliad. VII, 221.

At that epoch in Greece were executed in the house by the members of the family certain labors; such as spinning of flax and wool, weaving and the making of garments. A single time is mentioned in the epic poems a poor woman, that occupied herself in the preparation of wool outside the house.[7] There is a beginning of independent industry, but a very w weak commencement.

Note 7.p.279. Iliad. XIII, 433-435.

As for other labors, those in the province of men, there were henceforth men of the trades, masons, carpenters and joiners, curriers, wheelwrights, blacksmiths and goldsmiths; but the tecnnics for each of these professions must remain very simple. The division of labor was not carried very far. Each artisan had a very extensive specialty. The armorer also fabricated jewels.[8] Shields of leather covered with sheet metal were also made by the currier as well as the blacksmith.[9] The wheelwright and the carpenter cut in the forest t the wood that they used;[10] they only employed green wood, that could only produce very rude work. In those conditions the procedures could not be very scientific; thus every intelligent and energetic man practised the same trades if n necessary, that we are accustomed to regard as requiring a long apprenticeship. Paris built his house at Troy by working

with the best artisans.[1] Ulysses constructed with his own h hands his stone chamber, where he fashioned the nuptial couch that he made from the trunk of an olive tree.[2] In the island of Calypso, he is no more embarrassed in fastening together the planks of the raft on which he will escape from his prison.[3] Under the pressure of necessity, everyone is still the man to do everything. Eumeus himself built of rough stones the walls of his farm house; the sandals with which his feet are shod were cut from the fresh skin of one of his goats.[4]

Note 8.p.279. Iliad. XVIII, 401, 478-613.

Note 9.p.279. Iliad. VIII, 219-223; XII, 294-297.

Note 10.p.279. Iliad. IV, 485-486; XIII, 389-391; XV, 482-48

Note 1.p.280. Iliad. VI, 213.

Note 2.p.280. Odyssey. XXIII, 190-201.

Note 3.p.280. Odyssey. V, 243-261.

Note 4.p.280. Odyssey, XIV, 7-14, 23-24.

Nothing prevents domestic industry from producing fabrics of excellent quality, where the design and the mixture of colors would have a happy effect; but under such an arrangement the other industries, those treating stone, wood or metal, could not be carried very far. The workman only labored to satisfy the current need; so that he seems to have created nothing, that by its character of elegance of richness would merit becoming an article of export. According to some mentions in the epic poems and a commerce by barter to which the Greeks were parties, they supplied to the peoples from which then received objects of value, only raw materials like copper and iron, timber for building and hides, perhaps also animals on foot.[5] To the Phoenicians, those dealers in men, they also sold slaves, prisoners of war placed in their hands.[6]

Note 5.p.280. Odyssey, I, 184; Iliad, 473-475.

Note 6.p.280. There is frequent mention of these sales of slaves in the Odyssey.(XIV, 452; XV, 427-430; XX, 383).

Whatever the extent, arrangement and decoration of builings, the luxury of the Homeric age seems to have been very inferior to that of the Mycenaean age. For arms, clothing and ornament, the difference is as sensible. Nowhere does the poet speak of swords with blades of the kind of those, that we so much admired on the blades of the celebrated d

daggers of Mycenae.[7] Nor is there any mention by him of anything resembling that sword hilt in form of a dragon, found at Mycenae, where the scales and the eyes are made of bits of crystal, carved and inlaid in a gold ground.[1] Had Homer under his eyes any objects of this sort, he would not have failed to describe them. Two exceptions are alleged, the c cuirass of Agamemnon and the shield of Achilles; but as for that cuirass, we are expressly notified that it is a product of Cypriote industry, i.e., of Phoenician work, and as for the shield, if the first idea might be suggested by some work of the blacksmith or goldsmith, the imagination has e extended freely on that theme; it has given to the decoration a complication, that could not have suited the reality. The poet himself indicates in presenting this object as the work of a god, Hephaestos. It does not seem that the bronze arms of the heros of Homer were generally very ornate, and the iron swords found in the tombs of the Dipylon appear to have been very simple. At most the hilt was perhaps ornamented by bands of gold or of ivory, with designs traced by t the point, which have been found in several of those tombs.

Note 7.p.280. Histoire de l'Art. Vol. VI. pls. 17,18,19.

Note 1.p.281. Schliemann. Mycenes, p. 369; Figs. 451-452.

The epic poems do not represent the kings and chiefs of the people as covered by those ornaments of gold, that were sewn on the garments of men and women in the course of the Mycenaean age. Some have thought to find a memory of that fashion in two verses, that show Zeus and Poseidon "clothing themselves with gold on skin;"[2] but the poet attributes that appearance to gods alone, and also it is perhaps to see there only a mode of speech, a vague image or touch of color, in which it would be an error to seek the indication of a certain detail of apparel. The egis is the sole object that recalls these rich plates of gold found on the breasts of corpses in the excavations of the Mycenaean acropolis; but poetry attributes the egis only to the gods Zeus and Athena. For men, even those above the others by their birth or rank, besides war equipment, it is the use of beautiful cloth, f fine and soft, that the shuttel or needle has decorated by a border of color and sober designs, similar to those traced by the brush of the caramist on the shoulder and neck of vases

In this respect the Greeks of Homer are nearer than the Mycenaeans to the Greeks of the classical age; as those do, they find themselves incited by the simplicity of their clothing, not to demand an effect as formerly from the accumulation and the gleam of metal overlays, but from the happy arrangement of the drapery and folds, that it forms on the body. Yet if such be the final result of the change introduced in the customs, one of the causes that have caused this change was perhaps even the diminution of the quantities of gold and silver in circulation. They had less of the precious metals to shape into buttons and pendants, spangles and jewels of all sorts, they found means to do without them, yet not for that renouncing the satisfaction of a certain innate taste for elegance and nobleness. Necessity has been the mother of industry.

Note 2.p.281. Iliad. VIII, 43; XIII, 26.

What the excavations reveal to us on this subject accords with the inductions, that we have derived from the statements od the poems. There are jewels in the tombs of the Ceramicos at Athens; but one can see how much in their weight and the originality of their decoration, those jewels are inferior to those taken from the Mycenaean tombs. Those appearing most advanced in manufacture, those bands of gold all covered by figures are interesting for the themes treated by the artist; but one feels that the workman economises the metal there. The thin stamped sheet, where the ornament is effaced by a slight pressure, has replaced the resistant and ductile plate, where the little chisel and hammer brought into relief images that have frequently retained all the freedom of their first relief. There are beautiful materials of which the Mycenaean artist made frequent use, and that his successor seems not to have had at command; for example, such are alabaster and rock crystal. No trace of them is f found in the tombs of the Dipylon, and they are not mentioned in Homer.

Certain types of jewels have disappeared, and thuse in w which Mycenaean art showed itself most inventive and most skilful; thus the rings whose bezels are ornamented by an image engraved in intaglio in the thickness of the metal or in a fine stone, that could serve as a seal. Homer does

not seem to know the use of the seal and rings are not named, neither among the pieces composing the ornaments made by Hephaestos, nor among the gifts by means of which the suitors seek to conciliate the favor of Penelope.[1] In the most ancient part of the Attic cemetery, aside from diadems, there are only those pretty jewels, that cannot be wanting where a woman was buried with her toilet equipment, hairpins, earrings and bracelets. As for the tombs where men repose, they most frequently contain only arms. Men were not accustomed to jewels, since they had ceased to conceal beneath the gleam of metal plates the texture and design of the fabric that clothed them.

Note 1.p.282. Iliad, XVIII, 401; Odyssey, XVIII, 292-301.

The precious metals had then become less abundant and rarer in use; in many cases, they had been replaced by bronze and iron, bone and clay; but men undertook to supplement the poverty of the material by the search for ornament. The historian would have no idea of what that ornamentation was, if he were reduced to seek his information only in the epic poems. Of what he sees everywhere and every day, the poet says not a word. His curiosity is aroused only before the works that are out of the ordinary, "i.e. before those of the armorer and the goldsmith, especially when they are of foreign origin; he mentions them alone to his auditors. Besides, the Grecian goldsmith did not advance the same as his other contemporary artists; with reference to them, sometimes he delays and sometimes he advances. He continues longer than them to be attached to certain motives of the repertory of the Mycenaean artist, and finally when he is freed from that tradition, he is the first to become inspired by the motives offered him by oriental models. Then it is not from the little that remains of his work, that it is necessary to ask why and how taste was modified in Greece, as a sequence of the shocks that led to the fall of the Achaian kingdoms. If we have verified this change, the difference has appeared to us particularly in objects where the material has no value; there are shown and everywhere alike, or at least inspired by the same spirit, the typical motives of the style, that we have called the rectangular geometrical style.

Taking this style where it adheres strictly to the resources drawn from its own possessions, when compared to the Mycenaean style, is it an advance or a decadence? The question is one of capital interest. According as one solves it in one or another sense, he will understand in a different manner the history of the Greek race and of its civilization, of the course that its genius has followed in the centuries, that may be termed its years of adolescence, between its obscure origins and the splendor of its full development.

For what is purely linear design, Mycenaean ornament with the method that it derives from the curved lineand its easy inflexions, furnishes motives more agreeable to the eye than is the stiffness of the straight line. The painter of the vases of the Dipylon vainly tried to complicate and vary his lines; even with the fret and its derivatives, those never attained the refined elegance and the suppleness, that his predecessor knew how to put into the scrolls of his spirals, where he also reserved a place for the rectangle, the lozenge and parallel lines. By contrast, these right lines being discreetly mingled with an entirety with a different principle, contributed to make the decoration more complex, and to vary its appearance.

Where the advantage of the Mycenaean designer is still more marked is in the part he takes in the imitation ofthe living form. During a certain time, that is represented on the bronzes and on the vases later than the Dorian invasion only by a single organic type, the marsh bird, to which are later added the horse and the man. As if the leaf and the flower had disappeared from the world, the plant is absent. On the contrary, in the artist of the earlier age one feels the passionate desire to profit by all the suggestions of life and of its inexhaustible fertility. Plants, animals and all amuse and inspire him. From the plant he demands not only the flowers, that like the iris, rose and lily, strike and charm him by the fragrance of their perfume, the elegance of their pose and the splendor of their color; he seeks also beneath the transparent water the long ribbons of the alges, where they undulate with the movements of the waves. Whether he takes his models from the flora of the sea or that of the land, he groups in the happiest way

the elements of which he takes possession; he invents the scroll, i.e., the flexible branch that unrolls without end, ornamented by its flowers and its leaves. That arrangement, which gives a continuous ornament of such a pleasing effect, oriental art had not known.[1] Primitive Greece invented it, and this is in the heritage that classical Greece will seize on, after this motive had almost fallen into desuetude in the intermediate age; perhaps something of it was preserved in the goldsmith's works, that are now lost.

Note 1.p.284. A. Riegel. Stilfragen. p. 127.

It is the same when from the animal the painter and sculptor seek themes for ornamenting their works. There again t they are not satisfied with reproducing those types, that by their dimensions or the part that they play, seem to occupy a superior rank in nature. The great quadrupeds interest the artist, both the domestic animals and the wild beasts of the forests; he likewise makes use of the bird, that he represents as walking, flying or swimming; but wha has particularly aroused his curiosity is an entire order of forms, to which many schools of are have accorded very little attention; besides the insect with large wings and slender antennae, like the dragon-fly and the butterfly, there are the fauna of the sea, the fishes and mollusks.

One knows what special pleasure he took in placing on his jewels and his vases the image of the octopus, cuttle-fish and nautilus; the lines that represent the membranes and a arms of those mollusks have the same roundness and undulations as those that characterize the elements of his line drawing. He commenced by copying these types in the spirit of realistic accuracy; he ended by finding there a pretext for motives, that only distantly recall the forms of the model. Thus is explained what has been termed the Japanism of Mycenaean art; there is an entire vein of fancy, which always seemed exhausted when the geometrical style prevailed; yet it will later have in classical art abrupt flashes, but without ever flowing anew with as much abundance and frank peculiarity.

When from the choice and the nature of types, one passes to the study of the interpretation that has been given in relief, the comparison leads to an analogous result. The

Mycenaean artist is still very inexperienced. When he attacks the human figure, he finds in the complexity of its contour and in the variety of its attitudes, difficulties over which he triumphs very imperfectly. Even when he renders t there the entirety of the pose sometimes with a vivid accuracy; but it is particularly in the representation of the animal that he shows all his power; he carries into it a rare feeling for the peculiarities of the form and characteristics that distinguish the species. He has the task a and the gift of movement; he endeavors to seize on the stag, lion and bull, the play of the muscles stressed for running or leaping. In spite of the faults in drawing that nearly always escape him, when the image is not huddled in a narrow space as on engraved stones, one divines in his work the intelligent and sincere joy afforded to him by the spectacle of the display of force. With the engraver of brooches and the painter of the Dipylon is nothing similar; even when t they are emboldened to insert figures in their rectangular panels, their hands retain the habits contracted in the school of general design. In their paintings the figures remain angular and dry, fixed in a small number of poses, always the same. The animal is no more studied from nature than the man; it is no less conventional and schematic. The images are rather signs of ideas than copies of the reality, they recall certain personages and certain actions, rather than pretend to represent them.

We have arrived at the end of the comparison; it seems that the question may be solved. Mycenaean art is very superior to that which succeded it. Its domain is much more a ample; it has higher ambitions, that it succeeds in realizing in large measure. By the spirit that animates it and by the aptitudes that it reveals, by its manner of comprehending the form of life, by its qualities of warmth and spirit, the art of these tribes to whom we only dare to assign a n name by conjecture is certainly nearer the grand art of Greece than the art of the 10 th and 9 th centuries; across t that long series of years, it in a manner gives the hand to the classical art over the heads of the chiselers and painters of the school of the geometrical style.

Yet the artist of the latter school allows to be perceived,

even in the works that surprise and shock our taste, at least the germ od superior or iriginal qualities, analogous to those proved by his contemporary poets, the creator of epic poetry; in spite of appearances, he has not lost his time.

By the force of things, the advance was continued; society had improved its tools. Certain inventions were produced, whose benefits were gradually extended. Thus during these two or three centuries, the use of iron was diffused among the coast tribes of the Egean sea, and the employment of the new metal allowed the perfecting of the equipment of o offensive and defensive arms. Material had not alone to develop itself.

About the beginning of the same period, the arts of design appeared to have fallen very low, with this cold decoration from which is absent all image of life. Wen they commence to desire to arise, when they attempt to reproduce the figures of the animal and of man, they seem at first entirely unable to succeed in that enterprise. Almost an impression of barbarism is given at first sight by the paintings of the vases of the Dipylon, those personages with heads, bodies and members are represented by triangles, lozenges and sticks. One would say that the eye of the painter did not perceive, and that his fingers refused to trace the curves that define the contour of the form of the living being.

However, in the works themselves, we have discovered a character that we have not found in the same degree in those of the preceding age, the art of composition, a thoughtful composition, in which there already almost is science. we have indicated this same tendency in a work of a different kind, in the shield of Achilles, where the poet has arranged his themes and his groups as a contemporary goldsmith would have done, who had the same programme. In the creation of the potter as in that of the poet, one already feels announced one of the master qualities of the Grecian mind, its love of order and clarity. The genius of the race has then derived benefit from the intrusion of new ethnic elements, that have come to incorporate themselves with the Dorians. If by the violence with which they are omposed, those elements have cast confusion into the national life or even seeme



considerable part then taken by Athens in the elaboration of the elements of the geometrical style, and in the movement that led to replacing it by another style, richer in promise and to which belongs the future.

We have believed ourselves able to recognize in the geometrical style a contribution of the tribes termed Dorian, and if this style is good, as we have sought to establish, the development of a system of ornamentation with its roots in the primitive civilization of central Europe, we should expect ourselves to prove that its evolution was accomplished by the agency of peoples, who possessed its hereditary and direct tradition, and that had diffused south of the Balkans in the basin of the Ægean sea the characteristic methods and motives. Now affairs did not proceed thus.

At Athens this style made all the progress allowed by its principle, and that ended in applying to the representation of the living body the processes of drawing, that had been applied to the execution of purely linear decoration; however Attica, whose inhabitants claimed to be aborigines, had never been occupied by the Dorians. Is there not something strange, unexpected and paradoxical as it were, in that initiative thus taken by the industry of Athenian ceramists?

Here is what also adds to the surprise caused by this discovery; the Athens of distant centuries, before Solon and Pisistratus, is scarcely mentioned by history. Judging by the evidence of the authors, Athens only played a very faint part until the middle of the 6 th century. Far from being able to rival the great Ionian cities like Ephesus and Miletus, it had not in contenental Greece even the importance of Argos, Sparta, Corinth and Chalcis. Quite a different impression is left on the archaeologist by the examination of the monuments. There has been seen what place we have been compelled to give to Athens in this study of the most ancient Grecian art and of the industries connected therewith. In the 9 th and 8 th centuries at Athens, ceramics had the highest aspirations and was most inventive. There is at least the appearance of a contradiction between the statements of written traditions and those collected by the archaeologist. This disagreement cannot be neglected by the

historian; he is obliged to seek to explain it.

In their days of power and glory, the Athenians partially lost the ememory of their own past, as if dazxled by the splendor of the present. All retained by them were certain myths, like those of the exploits of Theseus and of his victory over the Amazons, which flattered their vanity; there are also some names of heros and of princes more or less legendary. This ardent and mobile democracy were not ignorant, that their fathers had lived under an entirely aristocratic rule for several centuries;[1] but it had only a vague idea of those institutions long since abolished, and especially it did not eender to itself an accurate account of t the degree of comfort and ease that numerous generations m must have owed to them. Perhaps mith the variety of the means of research at our disposal, we are today better able to divine without too many chances of error, what this prehistoric Athens might be, and what resources were at her disposal.

Note 1.p.289. Aristotle. (Greek).

During the two or three centuries that followed the Dorian invasion, Attica was governed by those Eupatrides, whose descendants, before the Median wars, must also take such a brilliant part in the creation of the grandeur of Athens. The state which then had Athens as capital did not aspire to the glory of conjuests; it did not associate itself with that movement of colonial expansion in which two neighboring cities distinguished themselves, Corinth and Chalcis; but sheltered behind the mountains that always served it as frontiers, it had already attained that political unity,,reached by other groups of the Grecian world only much later or even never. Thus it was almost entirely preserved from those murderous contests, that elsewhere and for example in Beotia kept at war cities whose territories adjoined. Under the respected authority of families, that passed as deriving their origin from heros sung by Homer, it had prospered. T The goound was cultivated with more care, as it was more s sterile in many districts of Attica. What it refused to yiield in spite of this stubborn labor, was easily obtained from abroad, thanks to the ports, some of which faced Asia and others the Cyclades and the Peloponessus. Those ports

were watched and the entire coast was efficiently protected from the pirates by that institution of naucraries, a trace of which we believe is found in the paintings of funerary vases. By the favor of the security thus guaranteed, professional skill was developed among the **artisans**, who in the urban group, whose centre was the ancient castle of the Erechtheides, labored for the king and nobles. The ivory figurines and the stamped diadems of gold have given us a good idea of the skill of the carver and of the goldsmith; but the subsoil of the plain of the Cephisus furnishing a clay of superior quality, it was especially the industry of the ceramist that took a rapid flight. What stimulated its activity was, that for the excess of its products it found assured markets in adjacent, and even in very distant countries. Before copying the vases of the Dipylon, the Beotians commenced to purchase them at the market of Athens; they are taken today from the cemeteries in the vicinity of Thebes. I These vases are easily recognizable, and specimens have even been collected in the cemeteries of the Sicilians, among w whom commerce carried them before any Greek colony had been founded on the coasts of Sicily.[1] Henceforth a notable profit was derived by Athens from that exportation.

Note 1.p.290. In the Sicilian cemetery of Finochito, Paolo Ossi found pottery of the geometrical style, in whose decoration enters the fret, which is the favorite motive of the potters of the Dipylon and their mark of fabrication (Bull. di. Paleon. ital. 1894, p. 23-37; 1895, p. 182-183). He showed them to me at the museum of Syracuse, and according to all probability, those vases came from Athens.

Matters being thus, when the geometrical style came to be substatuted in Gre ce for the Mycenaean style, that had exhausted its vein, where could this new style find to flourish and expand, conditions more favorable than in Attica, which had escaped the evils of invasion, and where the potter by a well regulated rule and sheltered from internal t troubles, had at his disposal the fenest clay ever employed by the ceramist? Doubtless it was by the intermediary of t the tribes from the North, that occurred the renewal of the repertory of the ornamentist, and it seems proved that those tribes in their march South did not pass over Citheron and

Parnassus, that they only supplied elements of some importance to the people of Attica, where Ionian blood has always dominated; but it also appears that from the time when the Dorians still dwelt around Parnassus, Athens had already e entered into certain relations with them, and in what is related of the expeditions of the Heraclides conducted against the barrier of the isthmus, there is a certain trait that evidences these same amicable relations. Further, the Dorian states were established in the vicinity of Athens in Argolis, at Corinth and in Megaris; also there was a contanual movement of exchanges between Athens and the islands as at Thera, where were opened workshops that produced beautiful specimens of the style in fashion. In one way and another, the potter in Athens then had been soon initiated into the practice of methods of decoration, which then tended to peevail. By a happy combination of circumstances, he found himself better placed than any other to derive from the system of forms adopted, all that this could give him, and to introduce therein themes, which by their nature did not seem intended to enter into his works; thus he will preside over a last and decisive change of the style of painting on vases, by the effect of this incessant labor and under the influence of oriental types. In the study that we made of his work, we stopped at the moment when his hand b began to model and his brush to decorate the vases called proto-Attic. Now while those still betray much inexperience, they already by the character of the subjects chosen by the painter and by the charm assumed by his design, announce the works that will be produced by the masters of the 6 th and 5 th centuries.

Thus in that Greece in formation, that for want of a term defining it more accurately, we have termed the Greece of the epic period, that Athens which seems to live such an obscure and isolated life, is already in certain respects in advance of even the cities, which by the powers displayed as explorers of unknown seas and as colonizers of barbarous lands, appear to march at the head of the Hellenic races and to personify the genius with the greatest splendor. Athens is doubtless still far from the time, when she will erect on her Acropolis temples of white marble, and where on the

pediments of those edifices, one will place statues that we admire, however mutilated they may be, as the most perfect works of Grecian sculpture; but those elevated forms of art are nowhere represented in the course of this period, no m more than the enterprising and rich Ionia, than in insular Greece or on the European continent. There was then in Greece scarcely any other art than industrial art, and in at least one branch of that art, Athens has a marked superiority over all other Grecian cities; none of them possessed workshops in which were fabricated pieces, that by their dimensions, by the nobility of their decoration, and by the interest of the themes represented on the clay, were comparable to the great funerary vases that surmounted the tombs of the Codrides and the Melanthides. We are accustomed to venerate and cherish Athens as the incomparable educator of mind and taste, to seek our models in the writings of her poets, historians, philosophers and orators, architects, sculptors and ceracim decorators, behind which we divine P Polygnotus and Zeuxis. Under the control of those sentiments, it is not without pleasure mingled with some surprise, that we have labored to bring to light the precocious merits of the potters of the Dipylon; we have been happy to render j justice to their patient and sincere efforts, to see them with all their awkwardness, already in advance of their contemporaries in other Greek cities, and by the beautiful arrangement of their decoration as well as by the generous a ambition revealed, to laboriously prelude the future masterpieces.

BOOK III. ARCHAIC GREECE.

Chapter I. History and Religion.

After the first olympiads, Greece finally commenced to n have a history, that still comprises many gaps, but whose web already presents some consistency. The threads of this web have been woven by Greek authors, Herodotus, Thucydides, and many other writers whose works are now lost, but whose recitals were at the disposal of the annalists and compilers of the last age of antiquity. Even the most ancient of these historians, it is true, were only for the period preceding the Median wars, contemporaneous with the facts then relate; but the use of writing was diffused in Greece from the 8 th century, when those inquirers began their examination, they could consult authentic texts engraved on wood, bronze or stone. For all not supplied to them by the inscriptions, w which then if not rare, were generally brief and concise, they had recourse to oral evidence; they collected traditions still living and fresh, preserved by the pride of families, corporations and cities. Those creators of history felt at first that this was distinguished from fable by only a single condition; it is necessary for it to be based on a systematically established chronology. This chronology, they sought its elements in the calculation of generations, and particularly in official documents, such as lists of v victors at the great games, of priests and priestesses, of eponymous magistrates. These were not able to make it complete or certain in all points; yet they constructed the framework with sufficient stability, that the minds of their readers seized the order in which succeeded the events that they related. Modern science has gathered, compared and criticized all those statements; it has checked them by the evidence of epigraphic monuments that have escaped destruction; it has grouped them so as to form a series of facts whose sequence merits all confidence, although many details escape our grasp. The direction and progress of the social and political development may be followed without difficulty The fundamental dates are fixed. The grand lines of the masses are clearly distinguished; the figures of the principal actors, men or peoples, are drawn beneath the light, that without always being as bright as we should wish, still al-

allows one to define the particular physiognomy.

What has contributed to facilitate this retrospective co-ordination is, that from the Dorian invasion and the trans-marine migrations for which it gave the signal, the Grecian world has found a location and is solidified. Doubtless the equilibrium there established comprises many oscillations. The cities composing it are passionately attached to their independence, to their autonomy, as the Greeks said; none of them renounced it voluntarily. Those most ambitious and most powerful succeeded in imposing for a time their suprem-acy or hegemony (this was the standard expression) on a cer-tain number of the weaker cities; but those groupings only have a mediocre stability. Menaced by the jealousy of those that they alarmed, they contained within themselves intern-al causes of dissolution, and thus one sees rapidly weaken-ed and degraded a certain State, which had played a very brilliant part, while another was previously obscure and then aspired to the first rank; bloody conflicts occurred, that changed the respective situations. Yet one and another people, that which lost its external dependencies as well as that which begins to make its ascendency felt afar, main-tained themselves and continued in the territory in which they had built the temples of their gods, and where from generation to generation they had deposited the remains of their dead. Victims of secular hatred, some cities disappe-ar, like Pisa destroyed by the Eleans and Orchomenos by the Thebans; but a people does not perish. Reduced by the Spar-tans to the condition of serfs or driven away as a prey to the miseries of exile, the Messenians will revive one day and will repay their former conquerors for the violence com-mitted.

Thus connected to a definite portion of the soil on which they graved their names and made their ineffaceable imprint, the Greek tribes are not condemned to immobility. Each of them thenceforth has its point of attachment, its prytaneum where the sacred fire burned on the altar of Hestia, the goddess that presides over the indissoluble union of men a and the earth; but all or nearly all have held it in honor not to shut themselves within their narrow domain, but to take a more or less active part in the occupation and peop-

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peopling of the coastal countries of the Mediterranean. The Hellenes never moved so much as during the three centuries preceding the Median wars; never have their ports equipped and delivered to the wind so many ships, manned by bold companions not frightened by the perils of the seas and of unknown lands, bitter and murderous conflicts, relations to be established in barbarous countries by tact or firce, unforeseen accidents, combats in which the bands seeking fortune threw themselves on an enemy nearly always in superior numbers. This is the moment of the great colonial extension. Certain cities of the first importance like Miletus, Chalcis and Corinth, then scatter by dozens the growing cities along the coasts of the Black, Egean and Adriatic seas. Others like Megara and Thera, that are only of the second or third order, found colonies that soon surpass them in wealth and power. Then from the pillars of Hercules to the foot of the Caucasus, and particularly in the basin extending from the coasts of Ionia to those of Sicily, there is a rapid s succession of adventurous points extended in every direction, the prodigious energy of a force that does not reckon with obstacles and danger, of an inquiring soul projecting itself into space, on every side that a way seems to open before it; this is the effervescence of an abounding and o overflowing life.

In spite of the extreme diversity of these enterprises and episodes that distinguish one from another, the impression left by the study of this epoch is not that of disorder and of confusion. The historian no longer experiences here the same embarrassment as before the unexplained moments of the preceding age, before those sorts of pools and eddies of the human surge, that precipitated on Achaian Greece the northern tribes, and caused to flow into the islands of Asia Minor the ancient inhabitants of Hellas. To orientate one's self among all these expeditions and foundations, there is a guiding thread. It is known from whence comes e each troop of colonists; each colony has its metropolis. On the other hand, the colonies from the same metropolis are generally nearly all adjacent in the same region. The eye then follows on the map all the routes by which those emigrants have passed, and the mind has to make an effort to

reception was also reserved for that one of its champions, who won in one od the great games and brought the crown of the leaves of smallage or of oak; An entire people rushed toward him, and sometimes to give that illustrious compatriot a more striking evidence of public recognition, they desired him not to enter by the ordinary gate; to allow him to pass a breach was made in the enclosing wall. Then were rejoicings without end, festivals at which resounded the odes in which the poets mingled with the eulogy of the man that of his country, whose origin and warlike prowess they recalled. At the same time to perpetuate the memory of that success, there was erected in the sacred forest surrounding the god a statue, deemed to reproduce the features of the victor, whose name was engraved on the bronze, with that of his natal city.

It is understood that the prospect of such high rewards would arouse ardent emulation. This was so from the 6 th c century. In all German cities of some impoDtance the kings, where exceptionally that dignity was retained, the tyrants, who needed pardon for their occupation, the nobles, heirs of the prestige and wealth of aristocratic cities, and finally all those seeking popularity, aspire to these crowns. Now those competitors or their representatives, the drivers of their chariots in the arena, do not go alone to the ground. A famous athlete is followed by a number of his fellow citizens, and there was a no less number when a prince sends his horses into the stadium. Friends and subjects wish to be there, to lend their champions the support of their encouragement, and then if he conquers his rivals, to take their part in his success. Thus the multitude found itself c composed of the most different elements, and for the few days of the duration of the festivals, it crowded around t the sanctuaDies. In that crowd, where were spoken all the dialects of Greek, how many unexpected meetings occurred! They recognized guests not seen for many years and members of the same family, that the chances of emigration had divided into several branches. How many questions and replies must arise from those returns of the past, all those inquiries made to establish degrees of relationship, mutually to render account of all that had occurred everywhere, since

they were dispersed to the four winds of the heavens.

Further, that was not the sole pleasure of this sort that these assemblages had to offer, nor the sole form of the action which they exerted on the minds, to bring them to the same modes of feeling and thought. All present were continually called on by the conditions of the festival to give the same tone, if one may so speak, like as many instruments played in unison. They followed the same processions and were associated at the same sacrifices; they sung the praises of the same gods, whose wisdom and will were expressed for them by the same oracles. Finally, henceforth they had the privilege there of entering into relations with the interpreters of the highest conceptions, to which were elevated the genius of their race. Surrounded by a circle of auditors, whose curiosity never wearied, the rhapsodists recited Homeric poems and those cyclic poems that were their sequence; thus were engraved and preserved in the memory of all those long series of mythical personages and of varied adventures, in which from that time the artists in whatever city they labored, commenced to seek the themes that they developed. When the vein of epic invention failed, from lyric poetry and the rich diversity of its metres the Grecian soul demanded the means of translating its ideas and of manifesting its emotions. Ideas and emotions express themselves in the poet only to be diffused, borne on the wings of the rhythm, to go to affect the minds and move the hearts. Elegiacs like Callinos, Tyrteus or Theognis must love to make heard in those reunions the pieces in which breathed their patriotism or their anger, the inflamed exhortations addressed to their fellow citizens, the invectives uttered against their political enemies. As for the masters of what has been termed the choral lyrism, Ibycos and Stesichore, Simonides and Pindar, was it not in view of these same festivals, that they composed their epinicies, those grand triumphal odes, whose execution required a stage, a collaboration of voices and instruments, for which they could count only on the satisfied vanity and interested munificence of the visitors of the arena? Thus poetry contributed in various ways to create in this intelligent and sensitive public a collective soul, that survived the dispersion, that obstinately resisted

the effects of all the dissolving influences, and which constituted the moral unity of the nation.

In order to reduce to a minimum the expenses and the fatigue of the journey imposed on the inhabitants of the colonies by attending those assemblages, it was necessary for them to be held in a country placed midway between eastern and western Greece, between the coasts of Africa and of Illyria, of Thrace and of Scythia. Thus toward the south of the Hellenic peninsula, between the long chain of Parnassus and the sea bathing the shores of the Peloponessus, arose the temples toward which were turned at fixed times the eyes and steps of so many thousand men; hardly a few days of walking or on boats separated these places of assemblage.

That so closely limited region was that wherein the Achaian heros had built their strong castles, where they had r reigned over those old cities, which had thrown even into the paintings of the epic period the reflection of their w wealth and power. It was also in this territory or on its frontiers that were founded the most ancient sanctuaries, to which were attached the myths, like those of Delphi and Athens, of Corinth and Olympia, that had most occupied the Greek imagination and gave birth to the noblest divinities that it adore, and to the most popular cults. Finally, it was there that the socalled Dorian invasion had come to superpose on the primitive inhabitants of the country a new layer of people, and that these elements as if shut and pressed in a closed vase, were mingled but without being confused, that they had exerted on each other reactions sufficiently strong and prolonged, that all should acquire common qualities, and thus create the race, altogether one and composite, which under the name of Hellenes has made such a great figure in the world.

The Peloponessus with the lands facing its northern coasts along the Saronic and Corinthian gulfs, thus at the beginning of historic times was the heart itself of Greece, and in a certain sense it always retained this character a and privilege. Yet not there occurred in the course of that period the most useful work and the most deciced progress, where the Greek genius produced the most original works, those that contributed most efficiently to prepare for that

full flight of letters and of arts, whose signal will be g given by the emotions of the struggle against the Persians and the unexpected victories that terminate it. Until the approach of the 5 th century, the Greeks of Asia are in advance of those of Europe. Why and how was this so?

This phenomenon had multiple causes, some of which escape the historian. He is too far from that distant age; he knows nothing of the acquired tendencies that could bring into A Asia Minor a certain tribe, or of the merit of the chiefs that presidend over its establishment. What he sees is that the surroundings into which the Eolian and Ionian colonists had fallen were particularly favorable to the development of their native qualities. The field had more amplitude, t the lines were drawn at a greater scale than in Hellas. In Asia on whatever side one turned, there was before him more air and space, a more open sea, lands that extend and open more widely, where the plow cutting into the deep soil can take a course entirely different from that in the limited plains, narrow and stony ravines of Attica, Argolis and Achaia. The Hermos, Cayster and Meander are not like the Cephisus, Inachos and Crathis, torrents with water only in winter or after storms of rain; they are true rivers, that can carry boats in their lower courses, and whose discharge in any case is sufficiently abundant to suffice in every season to water the countries traversed. Those rivers had opened between the mountains bordering them passages sufficiently wide, that there was found place for roads followed by men and beasts of burden.

The roads that start from the coast and rise with the beds of the rivers lead to the interior and very fertile plains, and farther on to high plateaus easily passed over in all directions; they lead to the country inhabited by the Lydians, Phrygians, and behind those the Cappadocians, peoples all in relations with the Assyrians and Chaldeans through the defiles of the Taurus. By those routes that nature herself seems to have traced on the earth, merchandize of all kinds descended toward the coast of the Egean sea, where were founded the principal Eolian and Ionian cities. Those sold both the varied products of the soil and those of the culture of the flocks or of the chase of wild beasts; but

what were especially prominent in their markets were objects of luxury, metals and wrought ivory, jewels of skilful workmanship, woven and embroidered fabrics of many colors, created and exported from time immemorial by the industrial c centres of the basins of the Euphrates and the Tigris.

The cities in question rapidly became the marts of commerce, which by their mediation brought into relations western Europe and all western Asia. With the wares of all sorts t that came thus to fill the warehouses of the merchants of Smyrna, Ephesus and Miletus, exotic ideas, myths and symbols originally from Phrygia, Cappadocia and even from Chaldea, sketches of scientific theories, information collected from every complaisant source, flowed over foreign nations and the countries inhabited by them. By the same ways were also gradually transmitted, with the use of many relief types and many motives, the secret of certain technical prodedures and of certain tricks of the hand. Days that opened on the world and on its depths, when were seen both the confused swarming of savage tribes and the imposing outlines of great military empires, of their populous capitals, above which were sumptuous and richly decorated edifices. As if borne by the wind, words spoken beneath other skies and in unknown tongues came to the ears of the coastal inhabitants of the Mediterranean; These understood them; in traversing the space, they found in their course officious translators. There was in the movement of the caravans directing themselves to those ports, like currents of material and moral life, which issued from distant sources and converged toward some common reservoirs, there mingling their waves. These relelations, more suggestive as they remain incomplete, these echos of foreign voices not stifled by distance, these meetings and their surprises, these contributions of Asian workmen intended for the European consumer, were so many appeals to the curiosity, the instinct of discovery and the spirit of enterprise. Nothing was better calculated to spur and excite minds, to arouse in them the passionate desire to show themselves and to extend in all directions, in the realm of thought by literary and artistic creation, in that of the body by bold exploration, by the foundation of agencies profusely scattered everywhere, agencies that each ensured new markets for maritim

commerce, and supplied materials not previously put into c circulation.

In these conditions, several cities of Asian Greece had a growth whose rapidity was prodigious. At Ephesus the Greeks had found an ancient Lydian or Carian sanctuary, around which assembled the tribes of the vicinity. They appropriated its cult, after contests of which we know little save the result, and the reputation of their Artemis, the goddess w with a hundred breasts that represented the eternal fruitfulness of nature, was for much in the importance very quickly assumed by the city. Ships crowded its ports, that the deposits of the Cayster must have filled in a few centuries. They brought a multitude of pilgrims, that came to pay their devotions in the temple of the goddess; by the original arrangement presented by its vast dependencies and its colonnades, that was from the middle of the 7 th century one of the most imposing and most sumptuous of the edifices built by Greek architects.

Ephesus was then a religious centre in particular; but too many foreigners visited it, for it not also to be the seat of an international commerce that gave great profits. The road that descended the valley of the Cayster was one of t those most frequented among those, that from the high lands of the peninsula ended at the sea. Yet it was rather Miletus that had the great place for commerce, where the merchants had most enterprise and most daring in extendind the bounds of the field in which they operated. They could not extend in the depth of the continent; in their first steps, they struck against the Lydians, and the Carians, warlike and well armed peoples.

In these lands it was their interest to arrange correspondents that should profit by sending them merchandize; this required only politics and perseverance. On the other hand, the sea opened to their ambitions a field that seemed to n have no limits. Was there any end to those shores, where t they saw extend and flee before them to north and south their irregular and broken line? Particularly when they turned to the north, they felt themselves attracted by all the promises and all the possibilities of the unknown. After having reached cape Sigeum step by step, the mariners of

Miletus pursued that way along the coast of Asia, and beyend the two straits that enclose another sea, that they named Propontis, they found another sea, which seemed as vast as the Egean sea, but which did not offer the same shelter to barks driven by the wind. There were islands in view, as if to mark the path; neither deep gulfs, coves nor protecting creeks. What they had before them on leaving the Bosphorus was a sea frequently veiled in fogs, between steep and straight shores, black with forests, and which extended infinitely toward the east and north, without one's being able to suspect at what distance were the coasts, that must bound it in those directions.

Neither the currents of the straits, nor the immensity of this sheet of water yet unexplored stopped the Miletans. H Hugging the shores, going a little farther each year, they ended by reaching the end of that sea, even the feet of the snowy mountains of Caucausus. On the coast of Scythia they penetrated into the windings of those lagoons above which rise the hills and plateaus of the peninsula that they named the Tauric Chersonese, and everywhere they succeeded in forming relations with the barbarous peoples, that inhabit here the clear spaces and forests, there the ravines of the mountain, elsewhere the fertile plains yellowed by the cereals. At the end of a century, on that long line of coasts from the Hellespont to the mouths of the Phasus, then had founded about 80 agencies, many of whom must become important cities. Henceforth they were so well accustomed to that sea, where they could find everywhere resting places among friends, or compatriots, that they changed its name. At the first moment, when they stopped in hesitation at sight of that immense sheet of water, they had called it the Axeinos or inhospitable; later after forming the custom of frequenting these seas, it was the Euxine or hospitable sea.

The Phoceans followed the example of the Miletans; but t they extended in a different direction: their bold mariners sailed to the West. They did not stop in the ports of Sicily and Italy, as Greek navigators usually did when they had made the western cape. They pushed on farther, across the wide basin separating the Italian and Iberian peninsulas, and went to reconnoitre lands where Greeks had never set f

foot before them, Sardinia and Corsica, Gaul and Spain; they formed commercial relations and established colonies there. It is known how one of these, Massilia, and today under the name of Marseilles is one of the most populous and most mercantile cities of the South of Europe.

The same Phoceans took an active part in another series of naval campaigns, another enterprise of colonization. When about 630, the Saite princes opened Egypt to the Greeks, who had supplied their cities with valiant soldiers, and had t thus contributed to consolidate the power of the new dynasty, the Phoceans were the first to profit by that permission together with the inhabitants of Chios, Clazomene and Teos; they had their place marked among the founders of Naucratis, that agency located on the Canopic mouth of the Nile, where was concentrated all the commerce that Asian Greece began to conduct in Egypt.[1] A little earlier and about the middle of the century, the Dorians of Thera that the Pythios of D Delphi ordered to send colonists into Libya, but if it is necessary to credit Herodotus, they could not find a pilot in the entire Archipelago, that knew the way to that country, and who would undertake to guide their ships thither.[2]

Note 1.p.308. Herodotus. II. 177.

Note 2.p.308. The same. IV. 151.

Yet men ended by reaching the coast, and from the beginning of the century Cyrene, the colony of Therians, was surrounded by other Greek cities nearly as prosperous; it became the capital of a little African Greece.

If the Ionic captains of Phocea carried their voyages of discovery even to the distant shores of Corsica, Gaul and Iberia, yet to the cities of European Greece fell the care of extending Grecian ciwilization to those of the coasts of t that continent, that had never been reached before. The two States which took the most active part in that movement were Chalcis and Corinth. Chalcis, the Greek Sidon, was enriched early by the working of copper mines of Euboea and by working in that metal; Corinth, whose location between two seas predestined it to be one of the principal markets of Greece. Other less important groups, such as the Megarans, the Achaians of the Egean, the Locrians and even the Laconicans, were associated in these undertakings.

Chalcis commenced to radiate to the North; it built even 32 cities in that triple peninsula, that Thrace projects to the South between the Thermaic gulf and the gulf of Strymon, which gave to this peninsula the name of Chalcidic, which it has retained till this day. About the same time, Corinth founded Potidea at the mouth of the Strymon. As for Chalcedon and Byzantium, they owe their origin to Megara, opposite each other on the two shores of the Bosphorus.

Corinth particularly had her eyes turned toward that Adriatic sea on which its gulf opened; it found a free space on that shore. Its first colony was Corcyra (Corfu), that is posted on the threshold of the unknown, at a little distance from Italy, and grew so rapidly as soon to claim its independence. The metropolis and its powerful colony no less agreed in scattering along the coasts of Epirus and of Illyria agencies, several of which like Epidauros and Apollonia were called to a brilliant future. In navigating the Adriatic thus, Greek sailors frequently perceived toward the setting sun the lands of Italy, either the lofty mass of the Garganos or the long Iapygian promontory, that terminates Calabria and extends North to the gulf of Tarentum. The sea is sufficiently narrow, that from the most distant ages, c certain relations were established between the shores of t the two peninsulas, the Hellenic and the Italian, relations whose traces seem to be preserved in the Odyssey, and besides indications of various nature, are evidenced by the results of excavations made by Orsi in the Sicilian cemeteries; there were found Mycenaean vases and vases of Grecian fabrication with geometrical decoration; but these relations were quite differently active in the 8 th century. The Greeks had lost even then the memory of the distant date to which belonged the founding of Cuma in Campania; all that they knew was, that Cuma had long been the only city that represented in Italy the language of civilization of Greece. Cuma already had commerce with Sicily and had already taken root at Zancle (Messina), when the emigrants from Chalcedon in 736 landed at the foot of Mt. Etna; the city of Naxos, properly speaking, was the first colony that the Greeks of Hellas e established in Sicily. In the following year the Corinthians were better inspired and seized the largest and best port

that Sicily possessed. On the island of Ortygia and between the two basins separated by it, they laid the foundations of that Syracuse, which was called to become one of the greatest cities of the ancient world. Then will be made for it a domain in the fertil lands on the flanks of that volcano by the slow decomposition of its lava, pumice stone and ashes. Catanea and Leontini are peopled by the Chalcidians; Megara Hyblea is a creation of the Dorian city bearing that name. At the end of the century all the eastern side of the island is Hellenized; then ambitions are directed toward t the southern and northern coasts. Gela and Selinonte grow under the auspices of the Rhodians, and soon afterwards Gela becomes the founder in her turn; she has Agrigente as a daughter, that did not delay in surpassing her metropolis in wealth and power. In the same way, Syracuse built the ramparts of Acrae in the heart of the mountains dominating her country, to cover them as an advanced post, while on the n northern coast, colonists sent from Zancle established themselves at the mouth of the river Himera. There no longer r remains to the Sicules and the Sicanes, who preceded the Greeks in Sicily, only the mountainous plateaus of the interior, whose inhabitants will only adopt the Greek language and customs two centuries later. Mixed with tribes of unknown origin that are called Elymeens, the Phoenicians retain possession of the ports in the West and Northwest, from Lilybeum to Panormus, today Palermo; they will remain masters until the Roman conquest, yet not without the influence of the cults and arts of Greece also making themselves felt even in that region. Segeste was the principal city of the country of the Elymeens; now in the course of the 5 th century was erected there a Doric temple, that is one of the most beautiful ruins left to us by antiquity.

Note 1.p.309. G. Perrot. Un peuple oublie. Les Sikeles. (Revue des deux Mondes of June. 1897).

While was extended around Sicily this girdle of Greek cities, how did the less distant Italy escape that kind of invasion? Even before landing on the great adjacent island, the Euboeans had founded there Rhegium opposite Zancle, to make themselves masters of the strait that we term the beacon of Messina. Establishments of the same kind multiplied

in the caurse of a few years. This was on the eastern side extending north. Locres, whose name even indicates the origin, the Achaian cities of Crotona, Sybaris and Metaponte, that soon became capitals of small realms, where the Oenotrian and Oscan tribes lived under the supremacy of Grecian republics. Finally Tarentum, that although Laconian emigrants were its first inhabitants, owed to its fisheries, commerce and industry a wealth and luxury, that passed into a proverb. The western coast of the peninsula will attract t the Greeks less; yet one cannot forget cities like Elea, t that by their sages took an active part in the work of thought, or like Posidonia, i.e., Paestum, employing the name given to it by the Romans, erected monuments accounted among the masterpieces of Doric architecture.

Of the cities just enumerated, their names will be found in more than one page of this history; most of them will be cited for a certain edifice that they have erected, for a certain decoration of their squares or their temples. That these mentions may not reach the reader unawares, it is important to warn him, to make him sensible of the band connecting them with their metropolises, all situated in Asia Minor or in Greece proper, those cities scattered over so many different shores. If in spite of the distances intervening, all these cities remained members of the same national body, they no less formed distinct groups, each of which had its particular destiny and its original appearance. Especially during the course of the archaic age when were created the types, before certain rules were imposed by the ascendant of superior genius and by works without peer, art has its provincial schools, and like the language, what may be termed its provincial dialects. That is why we have been led to offer here a rapid sketch of the general movement of Greek colonization; but we cannot think of summarizing for this period, even in brief manner, the history of the principal States of Greece proper, Sparta, Argos, Corinth, Sicyon, Athens, Thebes, etc. This history is known and is everywhere given with the details comprised; we shall only here recall a few traits, those suitable to be presented to the mind to understand how and why a certain city has contributed more than any other to the elaboration of the types of

the sculpture and to the progress of the manufactures, in what sense its action is exerted and what special character has been impressed on their works by its architects, sculptors and painters, its potters and goldsmiths.

If there be one opinion generally accredited, it is that which depicts Sparta as only occupied by war and politics during the course of its long life, and which denies to it all culture, all curiosity concerning matters of the mind. It is contrasted with Athens; there was an absolute contrast between the two cities. Like all the antitheses between the two cities that one pretends to introduce into history, this is but halfway just. The Spartans were Greeks after all. The Achaian element entered for a great part into the constitution of the people of the State, who had their centre very near the ancient capital of the country in the middle valley of the Eurotas. Sparta seems to have been one of the first cities of Hellas opened to the Homeric poetry; it is related that Lycurgus invited there the Ionian rhapsodists. At the beginning of the 7 th century the lyric Eolian poetry with Terpander finds the same favor there; in the greatest national festival, that of Apollo Cameios, a place is assigned to a competition in music; there is the cythera with 7 strings, the invention of that master, that for the first time charmed by its "nomes" the ears of the Greeks of the Peloponessus. Soon afterwards the Cretan Thaletas being ordered to Sparta, then troubled by internal dessensions, to establish order there, caused music and poetry to contribute to his work. A little later about 620, for the Laconian virgins the Lydian Alcman composed his parthenies, and the ancients also cited the names of seven other Spartan poets, that about this time cultivated choral poetry. Finally, at Sparta the elegy with Tyrteus introduced its social role, when it intervened in the contests of the field of battle and in those parties, to excite and to calm the minds. A people so sensitive to poetry could not be indifferent to art, and in fact we see at the same epoch native sculptors like Gitiades, or foreign sculptors like Bathycles of Magnesia, employed to decorate by their works the sanctuaries of Laconia. This Laconian sculpture is also represented today by an entire series of funerary or votive steles, one of w

which has already been reproduced here (Fig. 143).

The Dorians being strongly established under the dynasty of the Temenides in the city of Argos at the foot of its impregnable citadel, had founded there a powerful State, with the aid of its ancient inhabitants dwelling there, Achaians and Ionians, whose history is especially that of an unceasing effort to dispute the primacy with Sparta. That hegemony as the Greeks term it, it conquered in the first third of the 7 th century under an ambitious and bold prince Phidon. Argos then subjected all the cities of Argolis and the adjacent islands, notably Egina; it had become in the way the capital of the Peloponessus. It lost this supremacy on the death of Phidon; but there remained of it with the eternal desire of restoring it, the system of weights and measures which this sovereign had introduced in the peninsula, a system with which was connected the creation of silver money, the first struck in European Greece (Fig. 147).

At Corinth as at Argos, the Dorians by the right of the sword held a predominant place in the State; but their kings had an interest in guarding and protecting artisans and merchants, who by the opportunity of the location continued t their traditions of the ancient Phoenician agency. Under t the dynasty of the Bacchiades from the 9 th to the 8 th centuries, then during another century under the intelligent direction of the oligarchy that succeeded the abolished royalty,,prosperity did not cease to develop, and it attained its climax from 657 to 585 with the two tyrants, Cypselos and his son Periander; without always attaching an unfavorable idea to this term, the Greeks so called the party chiefs, that popular favor had invested with a power, that did not rest on hereditary privileges, was not defined by the laws, and was maintained only by the personal prestige of him that had seized it, and by terror when this prestige w waned. Sliding on rollers, the ships that scaled at Corinth passed from one sea to the other by the route called the d diolcos. The merchandize that they brought and were loaded with was the source of wealth. Corinth was also not merely a mart; like Tyre and Sidon, it was a centre of production. There were made fine woolen fabrics that the shuttle and d needle ornamented by varied designs; there were carved ivo-

ivory and metal; the bronzes that were cast there and chiseled there were sought everywhere. Pottery is one of the wares most appreciated by the peoples, that do not how to shape and burn the clay; it is perhaps that which they demand most insistently from the civilized men that supply them. The Corinthian potter had assured markets on the coasts of Thrace and Illyria, Italy and Sicily. He commenced to work for those barbarians or semi-barbarous patrons. To him was even attribsted the invention of the wheel. The error is manifest, for the Mycenaean ceramists were already skilful turners; but it no less attests the activity of those workmen and the reputation that they enjoyed. They did not long content themselves with making common pottery; it must be about the first years of the 7 th century, that there began to leave their workshops those painted vases with a reddish violet decoration, that appears to have enjoyed for long years an extraordinary vogue in the Grecian world and even outside its limits. Ships carried them by full cargos, and they are found today, not only in the cemeteries of Rhodes and the other islands of the Egean sea, but also in greater number in those of Campania and Etruria; they are even found as far as Carthage. To protect its merchant marine in those parts of the Adriatic where piracy always prevailed, Corinth provided a war navy; she constructed the first triremes. The public edifices of the city were in accord with its opulence; it is stated that at Corinth for the first time a pediment crowned the facade of the temple. After the death of Periander, when the tyranny was abolished (582), the colonies of Corinth escaped from the domination of their metropolis; but they no less continued with it commercial relations, and in spite of that injury to its power, Corinth continued to be in Greece one of the first States of the second rank, by its exceptional location, its commerce and industry.

Sicyon, the neighbor of Corinth, did not possess the same advantages; but in spite of the smallness of its territory, that city no less made a very great figure under the dynasty of the Orthagorides. No prince more strongly affected the imagination of his contemporaries than the last of those tyrants, Clisthenes, who reigned during the first quarter of

the 6 th century; he daqzled them by his vast fortune and by the liberal use that he made of it, as well as by his v victories in the great games of Greece. The treasury of Sicyon at Olympia bears witness to the munificence of the Orthagorides; we shall have occasion to mention that monument.

The Dorian element dominated at Megara. If that little S State proved its vitality in undertaking to people the shores of Propontis, it does not seem to have contributed to the progress of sculpture. Yet it had its treasury at Olympia, which presents curious peculiarities.

Quite otherwise at that epoch is the importance of Athens, that we have already seen in the preceding period prelude by the originality of its ceramics, the great part that it will play in the evolution of Grecian art. If in 683 the magistrates had become annual, the Eupatrides were still the only ones having access to those offices; but henceforth A Attica containned an entire people of laborious cultivators and of skilful artisans, that demanded a less partial justice, who were indignant at seeing nearly all the land in t the hands of the nobles, and who bent under the load of debts contracted with those rich proprietors. There is elsewhere, in this discomfort and these complaints of the multitude, there was a temptation for the ambitious, that desired to aspire to the tyranny. Cylon failed, and the legislation of Solon seemed to solve the social question without violence (594); but it allowed to remain too much covetousness and bitterness for a new legal order to establish itself immediately, end if it continued to regulate civil life, it did not prevent Piisitratus, a descendant of the Nelides kings, from taking possession of the power. With interruptions, he governed Athens from 560 to 527; his sons Hipparchus and Hippias succeeded him; they were driven out in 510.

In the history of art and particularly of Attic art, there is no period more memorable than those 50 years of the reign; there is none better calculated to make felt on this area the effects of the intelligent and thoughtful will of a chief of State; perhaps in all justice, it would be better to speak of the age of Pisistratus, than of the age of Pericles. Under Pisistratus and his heirs, Athens suffered a profound transformation. Untel then it had lived within itself and

rather isolated; it was less open that Sparta to the external influences, to those of the ideas and arts of Asian Greece. During his two exiles, Pisistratus had lived abroad; he had formed relations with the cities of Eolia and Ionia, with the tyrants of the Cyclades. Once uncontested master of Athens, he invites there at the same time as the rhapsodist possessors of epic poetry and the contemporary masters of the lyric song, the Ionan sculptors and the workmen accustomed to cut white marble supplied by the islands, where Lygdamis of Naxos, his lieutenant and friend commands. By his orders a sort of scientific commission collects the old epic poems, and first commits the text to writing. Recitals, competitions in musci and poetry are included in the national panathenaic festival, to which Pisistratus gives a splendor unusual before. He also enlarges the rustic festivals of Dionysos, from which soon came the tragic and comic churuses. At the same time he changes the appearance of the city, that until then had been only a great market town. He brings there an abundance of water from the neighboring mountains, commences the erection of eodifces of all kinds, monumental f fountains, gymnasiums, porticos, altars and temples. In the plain, he lays the foundations of the colossal temple of Zeus Olympios, that would only be completed six centuries later. He has established his residence on the rock of the Acropolis, where he builds other sanctuaries ornamented by reliefs and statues. The temple of Athena, whose arrangement has o been revealed by recent excavations, is like a first sketch of the future Parthenon. Whatever part that these foreign artists could take in his enterprises, the Athenians profit with ardor and success by the lessons that are given to them. Then is born that Attic school of sculpture that was p promised such an elevated destiny.

The course of these creative faculties was also favored by the democratic movement that followed the expulsion of the tyrants and by the unexpected energy with which the freed city defended its independence against the coalition of the Spartansl Chalcidians and Thebans. Sculpture will find its themes anf happy inspirations in these joys of the liberty recovered from the nobles. Thus will be erected at the entrance of the Acropolis the statues of the two slayers of

the tyrants, and on a terrace of the plateau those that represent the eponymous heros of the ten new tribes. A quadriga of bronze will perpetuate the memory of the victory obtained over the Beotians and the Chalcidians.

This display of strength and of fruitful life is not then an isolated phenomenon in the Grecian world; little States present a scene as interesting. The island of Egina in the Saronic gulf has only a small area, without water and sterile. Its inhabitants, since they had ceased to be dependant on Argos and Epidauros, were no less enriched by commerce and industry. They had light triremes with selected crews, that convoyed their merchant ships. They fashioned clay and exported pottery. Their sculptors were celebrated for their skill in proportioning the elements of bronze, in casting it in moulds and chasing it; they also knew how to cut marble. Spared by time, the temple dedicated by them to Athena is one of the monuments of which will be most frequent mention in these pages. Until its ruin, it presented one of t the best preserved types of Doric architecture that one can have, and the figures that decorated its pediments form the most beautiful entirety left to us by archaic statuary. Egina, "that spot on the eye of the Piraeus," was too near the shores of Attica for there not to be between the two States a jealous rivalry, that frequently broke into declared hostility. Egina must end by succumbing in this unequal duel (455); but it was an honor for it to have held Athens in c check for more than a century, and especially for having shown its emulation not only as a naval power, in opposition to the Persians on the day of Salamis, but also in the domain of art, as the native land of Kallon and of Onatas.

Although their vast and fertile territory nourished a population very superior in number to that of an island like Egina, the Beotians count less in that epoch of the history of Greece. The principal city of that country, Thebes, was particularly occupied in ensuring its supremacy iver the o other Beotian cities, but had no very high ambitions. We s shall scarcely have to speak of it, at least for this entire period, except in relation to a secondary brance of art. Like Attice, Beotia furnished an excellent plastic clay; its potters produced vases lacking neither elegance nor original-

originality; but so to speak, nothing remains of its edifices, and one does not see otherwise, that what it built was much admired in antiquity, nor that it had a school of sculpture which belonged to itself; it was contented to attract and employ Ionian and Athenian masters.

This cannot be the place here to recall even very briefly, why and how began that long struggle between Persia and Greece, that commenced at the ending of the 6 th century by the revolt of Ionia, and ended nearly two centuries later with Alexander and the conquest of Asia; but we must indicate the reasons that have decided us to fix as the limit of the archaic period the date of the battle of Platea (479). This victory of Hellenism forever drove the Persians out of Europe. The slowness of this almost unhoped for deliverance as it were intoxicated the Greek spirit; it gave that a prodigious impulse, and confidence in itself without limit, t the full assurance of its superiority, both native and acquir

Particularly Athens in that crisis was conscious of its genius. Between Marathon and Salamis, Athens was docile to the advice of Themistocles, became the first naval power of Greece, and had 200 galleys afloat when Xerxes crossed the Hellespont. On the morrow of the triumph, it emerged from its narrow frontiers, and created its maritime empire; the resources supplied by the tributes of its allies, it placed at the disposal of artists of genius, which it charged to decorate the city that had become the true capital of Hellenism, "the Greece of Greece," as said the poet. The architects will employ the white marble of Pentelicos, that they will work nith marvellous care, for constructing edifices that will remain the most finished examples of the Doric and Ionic orders; the sculptors and the painters will give to the lines of the human figure a nobility and a purity hitherto unknown. Art will be fully emancipated; all trace of naive conventions and of ancient restraints being effaced, it will use the materials with full liberty to express its ideas by forms, that will be their clear and perfect expression.

CHAPTER III. GENERAL CHARACTERISTICS OF THE ARCHITE

I. The Materials and Construction.

From the 8 th to the end of the 6 th centuries the Greek architect continued to use the materials employed by his predecessors of the Mycenaean age, and he used others furnished to him by a more advanced industry, or that the desire of impressing on his structures a more marked character of nobility and elegance suggested to him the idea of taking from the mountain slopes.

Hawing the nature of the soil of Greece, where the rock, when it does not project, is only covered by a thin layer of vegetable earth, the constructor finds everywhere at his command an excellent stone for buildings; he has only the embarrassment of choice among the different varieties of l limestones, marbles and sandstones, that form the framework of the Hellenic peninsula and of the islands lying around it

In Attica alone are counted no less than seven different kinds of stone, that from the primitive time until the Roman epoch have entered into the composition of the edifices of Athens and its suburbs.[1] Thus in the course of that period the architect renounces tamped clay, crude bricks, little materials with their size concealed under plastering; he rarely employs them further, at least in those of his structures to which he desires to give the character of works of art. He builds with cut and jointed stones. Calcareous tufa, a tufa more or less compact and hard, according to the quarry from which it came, is almost the sole material that he uses in Greece proper and its colonies until the time of t the Median wars; yet already about the end of the 6 th century he commences to make use of marble, at least in certain parts of the edifice to which attention is more particularly directed.

Note 1.p.319. G. R. Lepsius. Griechische Marmorstudien. Berlin. 1890. p. 114-125.

Among the rubbish of the temples of Pisistratus and his sons erected on the Acropolis of Athens, one finds in the state of fragments cymas and coronas either made of Pentelican marbel[1] or of coarse-grained marble furnished by Paros and Naxos. Also in that marbel from the islands were cut t the tiles found with fragments of the cornice, and that must

have formed the covering of the same edifices.[2]

Note 1.p.320. Ant.Denk.d. d. Arch. Inst. I, pls.38,50.

Note 2. Lepsius. Marmorstudien. p. 123.

Near these details the stone of the Piraeus forms not only the foundations, but also the visible mass of these buildings; one recognizes there the "achtites lithos" of the ancients, so-called from presenting everywhere the same appearance and the same density; it contains many little shells in places; but it no less lends itself to very fine cutting and to the execution of mouldings; it resists storms well.

Sicily, where so many great temples were built, had no stones equaling those of Attica. Marble was entirely wanting there, and the tufa is of very loose texture, pierced by l large and deep cavities near together. It was then necessary for obtaining surfaces apparently smooth, to cover the stone everywhere by a very thick coat of stucco; the form there only received all its fineness by means of that covering, on which the decorators have applied their colors. This stucco also serves as a protection for the surfaces that it covers; when at length it is detached from the stone, that is very quickly attacked by dampness. Never have I ever seen anything in Greece, that resembles the two columns of the pretended temple of Artemis at Syracuse. Judging from their outlines and their proportions, they must be nearly contemporaneous with those of the archaic temple of Corinth; but what a difference in appearance! The columns of Corinth have been exposed to the air for about 2500 years, but have retained the roundness of their shafts, and in a certain measure the distinctness of their profiles; those of Syracuse appear as if wormeaten; they give the impression of rotten wood.

Not alone by the application of stucco were remedied the defects of the stone; men also employed therefore a material, terra cotta, from which the industry of primitive Greece had not required that kind of services. As proved by its c ceramicsl,that knew how to burn pottery in a great heat; b but it had not thought of creating by the same procedures, materials to form the body of the structure, that would aid the architect to cover and decorate its surfaces. Among the ruins of the edifices of Mycenae and Tiryns have been found

neither burned bricks nor clay tiles; only after the Dorian invasion were kindled the kilns of the brickmakers. When on the temple was substituted the gable roof for the terrace of tamped earth of the Mycenaean megaron, it was necessary to find for the two slopes a mode of covering impenetrable to rain.

With the variety of forms given by the mould and the facility it gave for reproducing the same type in an indefinite number of examples, the tile offered the means of attaining the desired result without great cost. The roofing of the temples of the archaic age was then made of tiles. It is already so at the Heraion of Olympia, and it is the case for all the great temples of Sicily, to which in particular we owe our knowledge of the methods of the architects of the 6 th century. If in Greece proper, in the country that could easily use the manufactures of Naxos, there were exceptions, these were in small number. Elsewhere were edifices of smaller dimensions than those to which belonged the marbel tiles that have been found in the layer of rubbish caused by the sack of the Acropolis of Athens in 480.

Once the habit was thus adopted to profit by the facility of fabrication presented by terra cotta, and its marvellous qualities of resistance and duration, men were not satisfied to employ it as an element, as an integral part of the construction; the architect also utilized it, especially in I Italy and Sicily where the tufa was coarses, to decorate c certain parts of his buildings, such as the ceilings and entablatures, he faced the cornice with it, or he erected clay antefixas at the apex and angles of the pediment. The colors which fire had incorporated with the clay were far more solid than those applied by the brush on the plastering or on a slab of stone. Time has permitted to remain only very few vestiges of the ornaments that the brushes of the most skilful workmen of Athens traced on the marble of the Parthenon or of the Erechtheion; on the other hand, the plates of colored clay gathered among the rubbish of various archaic edifices best give us the idea of the polychrome decoration of Grecian temples.

If under the form of tiles and of facings, terra cotta has played a notable part in the arrangement of the temple, it

has not entered in the form of bricks into the composition of the walls.

Faithful to the Mycenaean tradition, the architect of the old temple of Hera at Olympia in the 8 th or 7 th centuries had still built its wall of crude bricks placed above a substructure of cut stone; but in the 6 th century that mode of construction was renounced everywhere, and bricks dried in the sun were not replaced by bricks burned in the kiln; that was by stone. When men occupied themselves in ensuring the duration of the house, in which they believed the protecting god of the city to be received and lodged, the use of stone was imposed. Supports were necessary for sustaining the roof of the external portico, and where these supports were exposed to storms, wood being fragile and perishable risked soon failing in its task. Now the burned bricks could not replace it in that function; we have seen what c complicated arrangements men had been compelled to make in countries where, as in Chaldea for lack of stone, they had been led to wish to construct columns of bricks. Brick was still less suitable for architraves; by reason of its small dimensions, it did not lend itself to cover spaces unless cut in voussoirs, when it enters into the composition of t the vault. On the contrary, the shaft of stone, the beam a and slab of stone replaced with advantage the trunk of a t tree, the timber and plank. There remained the wall, that one could rigorously retain as it was in the temple of Hera, of clay bricks; but the use of stone for the column and entablature led also to substitute it for bricks in the walls. When the edifice was entirely made of the same material, of the best tufa supplied by the neighboring quarries, there was a unity of appearance, that could give at the same time a guarantee of solidity. A wall of stone jointed with care has its own beauty and contributes to the effect of the whole

We have cited some sanctuaries built of bricks, that are regarded as very ancient;[1] but those were simple chapels w without external or internal colonnades, and that do not m merit the name of temples. The temple was an edifice of stone, wherever characterized by the Doric or Ionic order. On the other hand, men continued to employ bricks in other kinds of buildings. Thus there was at Epidauros a portico of

brick, called the portico of Cotys; half ruined, it was restored in the second century of our era.[1] A part of the walls of Athens and all of those of Mantinea were built of the same material.[2]

Note 1.p.322. Histoire de l'Art. Vol. VII, p. 70.

Note 1.p.323. Pausanias. II, 27, 7.

Note 2.p.323. Vitruvius. II, 8, 9; Pausanias. VIII, 8, 5. On the walls of Athens, see inscription No. 167 of C. I. Att. Vol. II, part I, as well as the work of M. Choisy, Les Murs d'Athenes d'apres le devis de leur restauration, in Etudes epigraphiques d'architecture grecque; 1884. Vitruvius also cites (the same) the cellas of two temples of Patras; the walls were there of brick; the columns and entablature were of stone. He finally mentions as great edifices entirely made of bricks, the palace of Croesus at Sardis and that of Mausolus at Halicarnassus.

Inversely from the Roman constructor, the Greek constructor seems to have used burned bricks only exceptionally. The chapels, portico, city walls that we have seen, were of crude bricks. Men knew how to make bricks hardened in the fire of the kiln; what demonstrates this are the epithets "ome"or "ople" that the authors attach to the word "plinthos" according to circumstances; but when that is accompanied by no adjective, it appears to designate crude bricks, that were in more common use, and nowhere is mention made of an edifice whose body was formed of burned bricks. Yet in Greece men had more than one occasion to take into account dangers run by every structure executed in clay bricks dried in the open air. Cimon and Agesilaus took Eion and Mantinea by turning against the walls surrounding those cities, here the waters of the Strymon and there those of the Ophis. Pausanias says in this respect,"bricks melt in water as wax melts in the sun." It was thought that this defect was compensated by the advantage offered by that compact mass, by not breaking off in pieces like stone under the blows of the battering ram, but by deadening them while yielding. There is truth in that observation; but what especially explains this preference for the use of crude bricks is the power of custom, the rapidity and cheapness of the procedure. Yet today in Greece, if in the mountains the house of

the peasant is usually built of pieces of stone, it is most frequently constructed in the plains of clay bricks among which are inserted wooden timbers.[3]

Note 3.p.323. Dörpfeld. Der antike Ziegelbau und sein Einfluss auf dem dorischen Styl. (In the volume, Historische und Philogische Aufsätze Ernest Curtius zu seinem siebenzigste Geburtstage gewidmet. 1884. p. 139-150.

If in compact construction wood continues to be used in the form of ties, and if men are compelled to resort to it to protect the ends of walls, to surround and enclose all openings, the part that it plays in architecture loses its importance, when is developed a taste for construction in dressed stone. In the temple of Hera it furnished the material of the supports, entablature, antes and the enclosures of the openings; but the walls of that edifice were of crude bricks. In the more ancient temple of Locres, that is dated in the 7 th century, the antes seem to have been wooden timbers.[1] In the 6 th century in the stone temples, wood scarcely serves more than to compose the carpentry of the roof. Yet it is still employed in houses to form the enclosure of doors and windows; this is divined from the nammen in which these are represented on the painted vases.

As for metal among the Greeks, it never took the function of a support in the building, or of a timber.[2] The architect used it only as a means of tieing, in the cramps and anchors that fasten together the stones of a jointed wall and the different members of an entablature. For metal coverings, we shall have more than one occasion to mention them; a general observation will suffice here. They must have been placed on wood in the first place; they protected it efficiently against storms, and at the same time lent themselves to receive quite varied ornaments; they offered contrasts and very happy harmonies of tones.

Note 1.p.324. Petersen in Römische Mittheilungen. 1890. p. 171.

Note 2.p.324. The Romans appear to have known metal frameworks, although they made a very limited use of them. (Vitruvius. V. 10, 3). See Ch. Normand, Essai sur l'existence d'une architecture metallique, in Encyclopedie d'architecture. 1883.paris, Morel.A letter of Laloux in Revue archaeoligique.

1885. p. 327-399; also Ch. Normand, L'architecture metallique, ou role de metal dans les constructions antiques. 1885. p. 214-228 of the same.

Although he built in stone, the architect of the classical age avoided the renouncing the renouncing of the very varied uses that he could make of metal, in using it to cover certain areas and to better determine the projection of a certain moulding; for example, he did that in the temple of A Athena Chalciecos at Sparta; but he will employ that metal with more discretion than did his predecessor, the architect of Mycenae he will not lavish it as he did, in coverings of natural or gilded bronze, in connecting pieces inserted everywhere with ostentation. If the part assigned in the whole of the decoration to the metal is thus restricted, this phenomenon admits of a double explanation. There is a sort of natural affinity between wood and metal; the wood seems to require the metal as its necessary complement; now in the 6 th century the wood no longer occupies in the edifice the place that it formerly held. At the same epoch the ceramist places at the disposal of the architect those plates of terra cotta, which cost much less than bronze and are not less durable; one comprehends that they may have had the preference, from the day when the industry was prepared to deliver them in indefinite quantity, and when the painter knew how to ornament them with designs whose vivid colors did not r risk being killed, either by the flow of the rain or by the rays of the sun.

2. Masonry.

The Greek mason knew lime very early; but he employed it only as a coating, as plastering; he never used it to compose a mortar for connecting together the elements of the w wall.[1] In the masonry that we have termed Cyclopean, for example, that of the walls of Tiryns, a clay mud was mixed w with straw or hay and inserted between the irregular blocks and the little stones that fill the intervals. That earth filled the holes; but it had no tenacity. Soon soaked by r rain, it left voids everywhere. To form a wall with all its members only forming one body, there was then nothing to c count on in such a rude method of connection.[2] They did not attempt to seek a rapid and strong setting mortar, that with

advantage would replace that wet clay; from the time that they renounced the use of greatmaterials, they adopted the method of setting the stones dry. These adhered together only on their surfaces well dressed with the tool, and in the s structures of the best epoch, care in dressing and facing will have been carried so far that the joints will become almost invisible; that is notably observed on the noble structures on the Acropolis of Athens. That result was obtained by an ingenious artifice. In the vertical and also sometimes in horizontal directions, the blocks touch only at t the outer edges along a narrow band enclosing a surface slightly sunken. By this limitation of the joint surfaces, t they were able to give to these a polish, difficult to obtain so perfectly over the entire area of the surface.(Fig. 148). It is further unnecessary to believe that they waited until the 5 th century to adopt an arrangement of this kind. Already on the old temple of Hera in the stone substructure that formed the base of the wall, the mason practised that relieving of the courses; but he did it with less art and in coorer conditions. No regular chiseling with a regularity sufficient to maintain a sufficient plane of contact between the two beds; the stones are hollowed in a concave l line and only touch at their edges. Too thin, this sort of lips are liable to break under the stress. From the succeeding age, men learned by experience to give them the necessary thickness.

Note 1.p.325. Histoire de l'Art. Vol. VI. p. 481.

Note 2.p.325. The same. p. 483.

The city walls had several courses in width with a very marked batter; the courses broke joints. Men thus believed that they had done enough to ensure solidity of the wall, when by a cutting diligently executed, they had established between the opposed faces of the masonrw a contact as p perfect as possible; but it was not the same there as in the temple, where the wall was much thinner, and where by reason of the function that they fulfilled, certain stones found themselves set to overhang. To prevent all movement there, all displacement of the materials, and to connect t them more intimately, they had recourse to mechanical connections, to cramps of bronze or iron, set in cast lead that

protected them from dampness. It is curious that the precautions takin to consolidate the masonry had the final result of hastening its destruction, from the moment that these edifices ceased to be maintained and passed into a state of ruin. There in a breach, where the lead covering was exposed and ended in being pierced, the iron increased in volume by oxidation, and caused the fracture of the stone around it; but what caused still more injury in many places was the w work, that in times of misery the inhabitants of the humble villages undertook, which had replaced the ancient cities. The least bit of metal had its value for these poor people; they broke open the wall to remove this ironwork.

From the end of the Mycenaean age, they ceased to construct with merely rough blocks, such as are found in the walls of Tiryns. That method had something rude, almost barbarous; it did not make sufficient difference between the works of nature, that sometimes piles up those rough blocks of stone, and thus of man, where he loves to impress the mark of his will. During its golden age, Grecian architecture will not seek elsewhere to astonish the eye by the enormous size of the materials employed; if some wrought stones do not fail to present exceptional dimensions in some edifices, that is because they were demanded by the necessities of the construction. For example, such will be the case for certain monolithic columns, for certain architraves that have to cover great spans. Now one has by this reason to say, that the c constructor did not tend to use great stones. The effort t that these represent is especially muscular strength; for that reason it remains in an inferior order. What characterizes the masonry of which will consist the edifices that we have to pass in review is, that it it is almost entirely composed of materials, that owe to their moderate size the advantage of allowing themselves to be easily dressed in t the quarry, to be readily transported and hoisted; these m materials of moderate dimensions lend themselves best to serve the designs of the architect.

One can consider the wall from two points of view, on the one hand being the appearance that it presents to the spectator that sees only its external faces, and on the other being its internal construction , only revealed where an

accident has breached the crest or torn the side. It is proper to commence with what one sees at first, when he finds himself before a fragment of an ancient wall, and the eye measures its height.

Among the different types of masonry that one finds in t the buildings of the archaic period, if any one of them seems to give the impression of high antiquity, it is that termed polygonal masonry. It has sometimes been confused w with Cyclopean masonry; but it differs prfoundly in that it already assumes in the stonecutter a certain professional skill, and particularly that its joints are sometimes as fine and close as in masonry with regular courses (Fig.149). What characterizes it is, that the stones composing it are but exceptionally prisms; many among them present surfaces that take the form of an irregular polygon, a pentagon or hexagon with unequal sides; no two in a piece of wall are exactly similar in dimensions and contour. By their reentrant angles, they are indented into each other, the term that best defines the appearance of this masonry would be that of indented masonry. The mass so constructed owes to that indenting, that locking together of the materials, an extreme solidity; thus it is employed by preference for retaining and city walls, particularly in parts near the gates most exposed to the attacks of the enemy. (Fig. 150). That is why in certain works our engineers today freely make use of masonry of that kind.

Ordinarily a broken line bounds the visible face of each block; but a curious variation from the traditional type is furnished by the powerful wall, that supports the terrace on which was built the temple of Apollo at Delphi. There t the network outlining the joints on the entire field of the broad surface is not composed of s.raight lines as elsewhere all the lines composing that network are curved with the m most capricious windings. (Fig. 151). That preference accorded to curved outlines complicated the work of cutting. Did it mive to the whole a superior resistance? I do not know; yet this wall with its slightly projecting footing has always marvellously fulfilled its function, in spite of the enormous thrust against which it must contend. Probably built in the 6 th centurn, it still stands in its entire ext-

extend for a length of about 295.3 ft.and with a height of more than 9.8 ft.

In the appearance of a wall of polygonal masonry is a sort of incoherence, even where the work has been most carefully executed, an apparent confusion that perplexes the eye; in vain it seeks lines that accord with the principal lines of the monument, which are either parallel or penpendicular. The Greek mind with its innate taste for order, for what it called the "cosmos," must be especially sensitive to that defect; thus one sees early, from the time when were built the ramparts and domed tombs of Mycenae, a very marked tendency appears toward horizontal beds of courses. By adopting that mode was realized a notable economy in labor. In polygonal masonry it is necessary to make each stone separately, that fits only a single place; on the contrary in masonry with regular courses, all the stones cut on the yard may be substituted for each other in nearly all parts of the building.

Yet it was scarcely possible for one to attain perfect r regularity at the first attempt; time was required for the workmen to accustom themselves to impose on the materials a form and dimensions, that in each structure were similar for all elements of the wall. Between the polygonal and the most regular isodomum is what one could term transition masonry, in which the beds of the courses are horizontal, but certain end joints are oblique and where indents have not been avoided; not having been cut to exact measure, more t than one stone encroaches on the adjacent course. For example, this is seen in a wall of Isionda in Pamphylia, that also presents another curious peculiarity; very low courses alternate with others that are higher and recall the wooden ties of primitive structures (Fig. 152).

From one experiment to another, perhaps from the 7 th century they came to practise that kind of jointing, which henceforth was almost solely employed in the construction of edifices such as temples, and which will even be applied to city walls; this is the isodomum of Vitruvius; it is what moderns term Hellenic masonry. In this system, if certain courses are sometimes higher than the others, all stones in the same course have exactly the same height, without always being of the same length. The joints of the upper course t

there always fall near the middle of one of the stones of the lower course, an arrangement that has the double advantage of better ensuring than any other the stability of the masonry, and at the same time being agreeable to the eye. (Fig. 148). By the beautiful symmetry which prevails there, this masonry affords entire satisfaction to the mind of the spectator, to which is thus recalled the idea of the master of the work, who regulated the arrangement of the entire e edifice.

One would be tempted to believe at the first moment, that polygonal masonry is more ancient than masonry with regular courses, and to assign thereby a later date to all edifices in which it appears. This would be an error. Taking it where the joints have the same precision as those of the isodomum and where the execution is careful, it is not in itself a mark of high antiquity. The work is as complicated as that of the isodomum; in a certain sense, it is greater. The truth is, that both kinds of masonry came by the same advance from that masonry which we have termed transition masonry, where the hand of the stonecutter is still uncertain and hesitates between the two types. In time this ended in separating and clearly defining themselves; each of them found its use in structures of different character. The polygonal was scarcely used for edifices, properly so-called. Exceptionally it is found in temples, as in the cella of the temples of Rhamnus, which are probably earlier than the Median wars.

What proves that the presence of polygonal masonry does not suffice to date an edifice is, that this masonry is found in certain structures superposed on the most correct isodomum; for example, this is the case in several edifices of the Greek city of Gnidos in Asia Minor (Fig. 154).[1] It is employed concurrently with the isodomum in Lycia in a building, the public baths, that according to the evidence of an inscription was entirely built "from the foundations" in t the first century of our era.[2] In the walls of Cnidos, this same masonry encloses vaults with voussoirs of very good execution; now we know from Thucydides that Cnidos was destitute of walls in 412, so that the Athenians failed to take it by surprise.[3] The enclosure is very well preserved, that surrounds the ruins of that rich city, and thus cannot be

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earlier than that date, and the place occupied there by the vault would rather make it thought to be of the Macedonian time than of the 4 th century. At the other extremity of the Greek world in Acarnania, the isodomum and polygonal masonry were employed indifferently in the walls where the entire construction appears to be of the same epoch.[1]

Note 1.p.332. Texier. Description de l'Asie Mineure. Pls. 160, 164.

Note 2.p.332. The same. Pl. 207.

Note 3.p.332. Thucydides. VIII. 35.

Note 1.p.333. L. Heszey. Le mont Olympe et l'Acarnanie. p. 393.

In Cyclopean masonry the external faces of the stones were uncut or scharcely dressed. When the elements of the masonry diminished in size, and they all received a dressing appropriate to the places that they must occupy in the entirety, men occupied themselves in cutting smooth the visible faces. This work was carried still farther in the isodomum than in the polygonal masonry.

The materials for the construction of masonry only received on the stone-yard an incomplete and temporary cutting. "The beds and joints alone were completed in advance, and the face remained, if not rough, at least very roughly hewn. The entire surface must be dressed off in a general facing, and that last operation was done without any chance of error and without experiment, because care had been taken before setting to incise on each block directing lines defining t the form of the face with entire accuracy."[2] For example, this is observed on the imperfectly finished structures of the south wing of the propyleion of the Acropolis of Athens. There below courses with entirely smooth faces are others where the directing lines enclose a field on which the stone is merely roughed. The projection of the boss must be cut away in the course of the facing dressed in place, and the entire face of the wall be brought to the plane of the chisel drafts along the joints. On the contrary, if one desired to avoid the slowness of the recutting in place, the continuity was frankly interrupted, and recourse was had to sunken joints or to masonry with successive offsets (Fig. 155). One also notes on these panels projecting tenons at about

the middle of each stone. "These tenons aided in moving the block, or rather they marked the thickness of the stone removed in cutting; these were so many means of hoisting, so many proofs serving to fix the basis of the payment due to the workman."[1]

Note 2.p.333. Choisy. L'art de batir chez les Romains.p.102

Note 1.p.334. The same. p. 111.

At least until the 5 th century the architect was not accustomed to preserve these auxiliary projections, those of the bosses surrounded by a draft and those of the tenons; they were reserved in view of the services that then could render; once becoming useless, they must disappear; where they remain is because the structure has not received the final touches. Very much later, what was at first merely an expedient was changed into a decoration. The sight of n numerous edifices where the work was interrupted accustomed the eyes to the temporarytemporary forms. Even in their antiquity, these found a sort of consecration. Hence arose t the different sorts of bosses with a variety of chisel drafts enclosing their projection, and the tenons being sometimes cut with diamond points became ornaments, that seemed to give a more robust appearance to the face of the wall.

Note 2.p.334. The concave line here representing the pavement of the cella is taken from a drawing by Durm. (Handbuch, Fig. 48).

The simple and frank taste of the archaic art did not know those refinements; yet one also finds in the monuments of that period a certain arrangement not explained by the effect of habit. Here is an example. If on enclosing walls the masonry is similar from top to bottom, it is otherwise in the walls of temples. There between the lowers of the courses forming the wall and the area on which that wall rests is an interval, that is filled by a row of great slabs set on edge, a series doubled in thickness. Much higher than t the stones with coursed beds, these slabs project 0.32 to 0.39 in. from the face of the wall (Fig. 156). By their dimensions as by their slight projection, the slabs in question are then clearly distinguished from the masonry above them, and thus they form a sort of continuous plinth on the lower part of the wall. We have already given the reason f

for this peculiarity, when we sought to show what influence the architecture of the Mycenaean age exercised on that of the classical age.[1] We said that one could scarcely see in that arrangement more than a memory of the stone substructures, that in structures with bodies of crude bricks, were always interposed between the damp earth and the clay mass, only a memorial also of the facings of heavy slabs of limestone or of thick planks, which protected the part nearest the ground, where the wall was made of small materials.

322Note 1.p.355. Histoire de l'Art. Vol. VI.p.729. Fig. 321. Otherwise Dörpfeld, we believe, first gave this explanation. (Der antike Ziegelbau und sein Einfluss auf dem classischen Styl).

The arrangement of the materials in the interior of the wall comprises no less variety than the aspect of the exterior. It is necessary to distinguish between the walls on which falls the task of resisting violent thrusts, like retaining walls on the one hand, and on the other, those like the walls of the cella of the temple, that only have to bear the upper parts of the edifice. The first must nelessarily be thicker. They are not everywhere constructed in the same fashion, and this is verified at Assos, where the great Doric temple and the fortifications of the city appear to date from the 6 th centurw. The enclosure is built in regular c courses. In places the wall is made of stretchers and headers alternating in each course (Fig. 157). The headers extend through the entire thickness of the wall; the inside f faces of the s.retchers do not touch but leave a space between them. Above the entrance gates, whose lintels it is important to relieve, the arrangement changes. Headers only recur in every third course; the voids thus occupy more space than in the masonry. Elsewhere that the wall is more massive and has a thickness of 9.35 ft. it is entirely different; the through stones are omitted, to which it would have been necessary to give unusual dimensions; the faces are made of stretchers and headers, the void forming nearly one third of the wall and being filled with rubble, that o occupies the space with the projections of the stones forming the faces. This is a procedure familiar to the Roman c constructor as that of this filling with small materials;

the Greek constructor did not make frequent use of it.

The principle is the same in the retaining walls; the stretchers alternate with long headers extending into the earth whose weight is supported by this masonry. All the difference is, that to better resist that stress, the wall is often flanked by buttresses, that make a more or less marked projection from the face of the wall. This is observed i the substructures of the terrace that the Pisistratides commenced to build at Athens to support the temple of Zeus Olympios.

The walls that limit and enclose chambers, those of the cellas, porticos and buildings of all sorts are much thinner. Only exceptionally in very large edifices does their thickness attain about 6.5 ft.; ordinarily it is scarcely 3.3 ft. The rule followed is that one never sees in the same course some stones extending through the wall and others stopping at the middle of its thickness; all the stones composing a course extend from one face to the other (Fig. 158), or indeed none of them extend through; a course of n headers frequently alternates regularly with one composed of a double row of stretchers (Fig. 159). In a temple at Labranda in Asia, the constructor has left a space between t the two parallel rows of stretchers, that are connected by headers (Fig. 160).

So that these walls are solid while remaining very thin, it is necessary for the materials composing them to be intimately connected, especially in the upper part of the structure; thus there in particular the absence of cement is compensated by means of metal cramps. It may be useful to specify by some numerical examples what we have said to the volume and form of the elements, that enter into masonry of regular courses. The stonecutter and mason very early contracted habits not entirely produced by the requirements of practice, but that suggested an arrangement of the materials in which taste found its place; these customs were retained without notable change until the last days of classical architecture. In masonry like the substructures of the Olympeion at Athens, that are concealed underground, they used great freedom; there in the same course are stretchers only 4.59 ft. long beside others that attain or exceed 9.84

ft.;[1] the height of the courses is further very unequal. We find that irregularity again in the foundations of the Barthenon. It is otherwise in the walls of the cella, whose masonry is always visible with its joints and contributes to the effect of the whole. There the courses are sensibly of the same height, and in each of these the height of the stretchers as 1 : 2.4. The ratio is verified according to the dimensions taken from a certain number of monuments and was nearly fixed.[2] That constancy is further not alone in the proportions; one again finds it in the dimensions of the b blocks, that vary within quite narrow limits. Those blocks are generally from 4.10 to 5.25 ft. long by 1.64 to 1.97 ft high. These are not what one might term great materials. T Those stones of moderate dimensions are effective, not by their mass, but by the treatment given by the workmen. One could say with the poet:- "the work is superior to material."

Note 1.p.337. Durm. Handbuch, Fig. 44).

Note 2.p.337. The same. p. 77.

3. Openings, Doors and Windows.

To arrange doors and windows in the walls, whose masonry we have just described, the Greeks employed two systems. In both the opening was closed at top by a horizontal lintel or platband; but this lintel was not always supported in t the same manner over the space that it covered. Here it rested on two ascending pieces, actual stone posts, that were independent of the wall in which was pierced the opening; (Fig. 161); there it was borne by the courses of the wall itself, into which it was engaged by its ends (Pl. XI, all the doorways represented excepting two). We shall cite here only as a memory the third arrangement, that is merely a v variant of the first, that which is only found exceptionally. This is the case where the verticals forming the jambs are intersected at the middle by one of the courses of the wall, that extends to the opening (Pl. XI, Alea, Assos, 3). Where this arrangement has been adopted, thes has doubtless been that men desired to dispense with erecting monoliths of great length.

There are very ancient examples of the two systems of a decided character. Thus in the treasury of Atreus at Mycenae, the doorway of the interior openu in the solid wall without

inserted jamb stones.[1] There are even certain edifices in which appear both types of openings. It is thus in the temple of Mt. Ocha, where the doorway has its proper enclosure, while the masonry is interrupted to give the windows seen at the side. In the facade of the market of Aegae in Eolia (Fig. 162) the windows also belong to two different types (Fig. 163). Yet it is certain that the system is that dating from the highest antiquity;[1] in the primitive structures b built of tamped earth, of almost rough blocks or small stones connected by mud, it is the sole means of obtainiug clearly limited openings with a firm and durable contour.[2]

Note 1.p.338. We term plates all those pages on which we have collected and systematically grouped the elements of construction or of the description of edifices. Although p printed with the type and inserted in the text, they have the same character as our large plates. We indicate for each plate the documents from which we have borrowed the figures comprised in that plate.

Plate XI. Elaeos (in Etolia); Lübke, Essai sur l'histoire de l'Art, Vol. I, Fig. 104; -- Assos, 1; Texier, Description etc., Pl. X bis. -- Thoricos, the atlas of the French edition of Archaeologie de l'Art, Pl. I, Fig. 14. -- Messene, 1; Expedition de Moree, Pl. 37. -- Oeniades, 1; Heuzey, L'Olympe et l'Acarnanie, Pl. XV,H. -- Phigalia, Guhl & Köner, La vie antique, Fig. 74. -- Paleo-Mani (Acarnania); Heyzey, Pl. 13. -- Oeniades, 2; Heuzey, Pl. XV,G. -- Orchomenos; Guhl & Köner, Fig. 77. -- Alea (Arcadia); Ramee, Historie generale d'Architecture, Vol. I, Fig. 171. -- Messene, 2; Expedition de Moree, Pls. 43, 45. -- Assos, 2; Texier, Description, Pl. 11, and Clarke, Investigations at Assos, Pl. 27. -- Assos,3; Texier, Description, Pl. 111.

Note 1.p.339. Histoire de l'Art. Vol. Vi. pl. 6. It is the same at the treasury of Minyas. The same, Fig. 190.

Note 2.p.339. The same, Fig. 296.

Wood ordinarily furnished the jambs and lintels. Yet men thenceforth thought best to substitute stone for that use, at least in the ramparts of citadels, if not in private houses; at the Gate of Lions, four powerful blocks of limestone, cut in a stone harder than that forming the adjacent wall, form the enclosure of the opening.[3]

Note 3.p.339. Histoire de l'Art. Vol. VI. p. 188, 505.

Thus from that epoch, when the architect had to make openings in his wall, he could choose between two different methods according to his convenience. He retained this freedom the two types of doorways remained in use concurrently. One need not feel any surprise. When the masonry had attained that perfection and regularity, which characterizes the beautiful Greek masonry, why did they also frequently take t the trouble to give the doorway separate jambs, actual supports inserted in the wall? Did they desire to provide there an enclosure, which should outline the contour, nothing would be easier than to provide this by means of a moulding modeled sunken or in relief on the external face of the courses extendind to the void of the opening. That is what had already been done at the treasury of Atreus, where had been executed thus a casing enclosing the principal doorway. If they did not always adhere to such a simple method, this is because that they remermered the doorways formerly constructed, where that insertion was imposed by the nature of the materials, the jambs being of wood or of stone. For city gates, men are generally contented with the opening that c creates a void arranged in the mass of the masonry. Yet in the enclosures are some rare examples of gateways with jambs and lintel separate from the masonry. (Pl. XI, Alea, Messene 2). The other system, that inspired by the primitive type, was rather reserved for the doorways of temples, houses and other edifices of the same kind. This type is still more f faithfully preserved in the treatment of the windows, as one can judge from those pierced in the facade of the market of Aegae and in the walls of the tower of Andros, that is attributed to the 4 th century (Figs. 162, 163). No projection from the wall. The jambs are monoliths; the lintel extends into the courses and beyond the jambs. There is further a lower slab, doubtless a sill, and over the lintel is a covering slab intended to stop the drips from rain, both projecting slightly from the face of the wall.

Note 1.p.340. Histoire de l'Art. Vol. VI. Fig. 194.

Judging of them by the paintings on Greek vases, these o openings were enclosed between four pieces of stone or of wood, and were in common use on public or frivate edifices.

They are found represented, sometimes single and sometimes coupled, in more than one of those paintings (Figs. 164,165). In regard to this, it has been stated that only the power of old habits decided the Greeks to employ such singular c construction, so out of harmony with the requirements of a normal construction. With that arrangement the jambs and lintel of stone are exposed to fracture, in case of a settlement of the courses.[1]

Note 1.p.343. Ch. Chipiez in Saglio & Daremberg's Dictionnaire. Art. Fenestra.

The masonry termed Hellenic by its horizontal beds and v vertical joints lent itself best to the creation of openings made in a solid wall, without the insertion of any supporting member. Openings of that kind were also established in polygonal masonry, in that where the precision of the joints attests the mastery of the workmen; it sufficed to modify the stonecutting accordingly at the edge of the opening. It is then easy to cite more than one example. (Pl. XI, Oeniades, 2; Orchomene, Phigaleia).

In whatever masonry they are made, these openings are ordinarily closed at their upper part by a horizontal lintel. The rule is still not absolute. In Cyclopean construction, the opening ends in a triangle or pointed arch by the junction of corbelled blocks;[1] by a procedure of the same kind but with more ingenious stonecutting were executed the Mycenean domes. The use of the same method will continue to g give openings, that close in various ways (Pl. XI). At Elaios is a triangular space formed by the courses of the wall; at Alea and at Messene (1) is produced the triangular top, here by two inclined and abutting lintels that connect with the jambs, there by the approaching of the courses. At Thorikos an opening with a pointed arch is formed by the courses of the wall. At Assos (1) the opening ends in a pointed arch by corbelling the courses. At Oeniades (1) the round arch is cut in two course stones, that touch at a vertical joint; no lintel. At Paleo-Mani, the two stones in which is cut the semicircle are separated by a narrow space covered by a great block that performs the function of a lintel. At Phigaleia a rectangular opening is surmounted by a lintel and ends in successive corbellings. At Oeniades (2) is a

trapezoidal opening surmounted by the lintel. At Orchomenos the lintel is of triangular form. At Assos (2) the opening terminates with cut-off angles. At Messene (2) beneath the lintel the jambs are attached to the wall and are in two p pieces. In a gate at Assos (3) the lintel rests on two courses at each side.

Note 1.p.344. Histoire de l'Art. Vol. VI. Figs. 195, 196.

Finally, over the gates of cities are found true arches with voussoirs, at least in western Greece, where one was much nearer peoples, who like the Etruscans had early made constant use of the arch (Fig. 166). Even skew arches are there.[2] The Greeks likewise could see the arch both in western Asia and in Egypt, and it is perhaps by the influence of those oriental models, that one can explain the use made of it in the walls of Cnidos. The Greeks were then early acquainted with the principle of the arch; if they made no m more use of it, this is because the materials at their disposal, very resistant limestone tufas and beautiful crystalline rocks, permitted them to cover the openings in a simpler and more rapid manner, than by the aid of voussoirs. In the simplest and noblest of their edifices are no other elements than lintels supported by the walls and columns; that is what has impressed on their architecture its original c character, and what has given to its monuments an exceptional stability.

Note 2.p.344. Heuzey. L'Olympe et l'Acarnanie. P. 150,Pl.1

What then conforms most to the genius of this architecture is the opening with all parts limited by straight lines, t that where the lintel is parallel to the sill. The opening of the doorway there forms in the vertical plane, sometimes a rectangle, sometimes a trapezoid. Of the two, the trapezoid is the more archaic form, which accords with the explanation that we have given to it, when we sought its origin in the procedures of the oldest constructors.[1] If they continued in even the 5 th century and still later to frequently give to the jambs that inclination more or less marked, particularly in temples and tombs, that is again by the effect of a very ancient custom. The eye is accustomed to that arrangement; to find it again, it experiences the kind of pleasure, that it feels in fixing itself on known forms and

familiar faces; perhaps one may say that it guides and leads the eye better to the higher parts of the edifice.

Note 1.p.345. Histoire de l'Art. Vol. VI. p. 505-507; Figs. 191, 192, 193.

4. The Column, Proportions and Decoration.

We shall not speak here of the column nor of the proportions as we have done in the other parts of this history, in treating the general characteristics of architecture. It is easy to see why we have thought it necessary to modify thus the plan that we have followed until this moment. In the s supports of the mouldings, proportions and profiles vary, according as these members belong to the Doric or Ionic orders. One cannot consider these elements in an abstract fashion, by detaching them from the entireties whose character is difined by them. We shall then limit ourselves here to recall that the column does not alone figure in those e entireties. With its base, shaft and capital, it can form by itself alone an entirety, that suffices for itself and is an independent organism. In this manner the Greeks have frequently employed it as an isolated monument, as the support of a tripod or a statue; but the part that it plays in that way is only secondary. In Doric and Ionic temples its forms are especially developed and they have finally determined themselves.

We shall say as much of the decoration; as a mathematician would say, it is likewise a function of the order. According to the mode in which the edifice arises and of which it is the ornament, it changes nature and appearance; it has no real existence except by and in that; there is then no opportunity to separate them. When we shall describe the Doric temple, we will pass in review the motives, that the architect employs to accent the lines and clothe its members; we will do as much for the Ionic temple. With any other process of analysis, one would be exposed to lose sight of the unity of the work, that the artist has created.

Chapter III. Religious Architecture.

The Doric Style.

1. Importance of the Temple and Names of the Orders.

From the 7 th century in the history of the temple, to t the construction and decoration of which all the arts contributed, is summarized the history of Greek architecture. Then by the aid of the temple we shall study the two systems of proportions, the two modes or two orders, as it is said, between which are divided the preferences of the architect from that epoch until the last days of antiquity; they are known under the names of the Doric and the Ionic orders. As for the Corinthian order, it can be regarded as a simple variant of the Ionic order. Vitruvius is the most ancient author in which one finds explained the theory of the three orders;[1] but the names that he applies to each of those modes date much farther back. From the 5 th century they entered into current usage, at least for the two principal orders. Euripides having to mention the triglyphs, calls them Doric.[2] When were these terms adopted and how are then justified? Vitruvius does not tell us that, as at least the indications that he gives on that subject are very vague. The Greek architects , whose theory he knew and summarized more or less accurately, seem to be especially interested in describing the edifices that they had constructed; but they do not appear much concerned with the history of these types and the question of origin. All that Vitruvius finds to say on that subject is, that the first temple in which the forms of the Doric architecture made their appearance was the Heraion of Argos; Doros built it after having conquered the Peloponessus. As for the Ionic order, the Ionians invented it when they had to erect the temple of Artemis in the city of Ephesus; in that edifice were shown for the first time the profiles and proportions that form the originality of that system. The Corinthian order was so named because the oldest monument in which was placed the capital that characterized it, was erected at Corinth by Callimachos. All know the anecdote that Vitruvius relates concerning this.

Note 1.p.347. Vitruvius. IV, 1.

Note 2.p.347. Euripides. Orestes. Verse 1372.

We do not occupy ourselves here with the Corinthian order,

which was developed only in the course of the 5 th century; but the problem has more interest for the other two orders, whose origins are confused with even those of Greek architecture. Is it true that the Heraion of Argos, erected by t the Dorians established in that city, was the first Doric temple that Greece consecrated to her gods? We cannot say. Of the edifice destroyed by fire in 484, there remains only the terrace that supported it. Further, there being given the traits assigned by tradition to the Dorians, it does not seem probable that those rude and bold soldiers, soon after having ravaged anf subverted Greece, would have played the chief part in the creation of a new form of art, a form of which certain peculiarities are explained by methods of construction peculiar to the Mycenaean age.[1] Yet one cannot allow himself to comprehend how was introduced into the language the name that has prevailed. Masters of Argolis, Laconia and Messenia, the Dorians exercised an uncontested supremacy over the entire Peloponnessus. Now in that country arose the first temples built according to this mode, t those regarded as the oldest examples. Was it not natural, that without asking to what tribe belonged the architects to whom was due that advance, men attached to this type the name of the Dorians, the Peloponessus having become almost a Dorian land?

Note 1.p.348. Histoire de l'Art. Vol. V. Chap. VIII.

As for the ionic style, it had its roots in Asia; as we have already stated, certain arrangements peculiar to it might be suggested to the Greeks of Asia Minor by oriental models.[2] In any case Ionia was the cradle of this style; t there mas it constituted, then to diffuse itself throughout all Greece; in that region it has always peen more in favor than the Doric style. The term Ionic order is then more justified than the corresponding term, from the point of view of history; it is more according to the reality.

Note 2.p.348. Histoire de l'Art. Vol. II, p. 218-222; III, p. 694-695.

Otherwise these observations can have only an interest of curiosity. Each of the terms in question designates a clearly defined system; we shall then employ them, as men did not cease to do in antiquity, without troublinm ourselves conc-

concerning their origin.

It is proper to commence this study with the Doric order. not that the Ionic order may not be in a certain sense as ancient as its rival; one can seek its rudiments as far in the past; but it is still the Doric that was first constituted and that presented the richest development in the 7 th and 6 th centuries. Before the Ionic it had created forms and had drawn up a system of proportions that it will never abandon, which from the beginning is nearly that to which it will adhere in those of its types regarded as noblest, as even the perfection of the species. Also on the Doric mode depends the most ancient temples built in the plain of Olympia and in the most important cities of Greece proper, of European Greece at Athens, Argos and Corinth. Finally, as we have already indicated, and if one may so speak, this style has its roots in the most ancient methods of construction, that were applied by the ancestors of the Greeks of history. Certain elements that compose it and make its originality have already appeared to us in Mycenaean architecture.

2. The Origins of the Order and of the Doric Temple.

To remain faithful to the method that we have followed, we shall also here carry ourselves back to the origins; we shall ask these to aid us in determining the characters that distinguish each of the two great orders. The genesis of the forms explains their development.

To seek where and how was born the Doric temple, will be to go back as far as possible in the history of the stone temple. In the Doric style were constructed the most ancient religious edifices that merit the name of temples, at least the most ancient of which some remains have been preserved.

Men have pretended to recognize the prehistoric model of the Doric temple in the hut made of beams and planks. Doubtless it is not impossible, that in distant times buildings in which wood dominated were devoted to religion; but in any case in whatever way it is represented, the hut gives no reason for the very particular arrangements that characterize the Doric temple. Further, as it is constructed entirely of wood, the cabin does not seem to have ever existed f for the needs of the cause, at least on the soil of Greece.

Th

the most rustic buildings of which traces have been found in this country had walls of earth with ties of wood. The champions of that hypothesis then start from an abstraction, from an imaginary type. We shall not stop here to discuss this theory and to show its improbability. What we will set forth has the advantage of not giving the same opportunity for free conjecture, and of finding its solid foundation on recent discoveries, with which one reaches a past much earlier than the time at which was constituted the Doric system.

Our starting point is a type of edifice that we have already found everywhere on our way, at Troy and in Beotia as at Tiryns and at Mycenae. This the megaron, the great hall that formed the open and public part of the houses of Achaian princes and nobles. In attempting to restore the architecture of that period, we have given the plan of those buildings which appeared to have most importance.[1] Here is t that of an ordinary megaron of small dimensions; it is one of the numerous edifices of that kind, whose traces were found by Dörpfeld in his latest excavations at Hissarlik. (Fig. 167). Its arrangement is most simple. Nothing more than a great room preceded by a vestibule or prodomos comprised between the projecting ends of the two walls forming the larger sides of the rectangle. Those walls and those of the ends are of stone. Blocks of quite large size form the foundations. Above they built these of crude bricks or small materials.

Note 1.p.350. Histoire de l"Art. Vol. VI, Figs. 48, 50; pl. II, M; Figs. 83, 118.

This plan is that of certain little grecian structures, of those that are the prototypes of what are termed temples in antis; but the Doric temple, where it possesses its full development, presents an arrangement quite otherwise complicated. This arrangement, which is that of the most celebrated monuments of Grecian architecture, how shall it be connected with the megaron, and by what way shall it be derived just as the adult and complete plant starts from the germ, that already lontains it, concealed in the mystery of its cells, the organs at the same time most complex and most d delicate?

There is only the appearance of a difficulty. Created for the man in view of the princely life, the type of the megaron is suited without effort to receive a more elevated destination. It was the noblest and most beautiful type of edifice known; it appeared quite naturally designed to furnish the gods with habitations, in which the piety of their worshippers invited them to establish themselves. This was the time when by the continuous and bold effort of its thought, the Grecian mind gradually detached itself from the primitive animinism, in which it completed the designing of the figures of those Olympian deities, who were grouped around Zeus and already had in the epic such clearly defined traits and attributes. For these divine beings, who were supposed to divide the government of the world, were required dwellings more ample and more beautiful than those of men of the highest rank, of the kings themselves. To appropriate the megaron to its new function, men were not content to enlarge it; it might be longer and wider than in the palace without gaining much majesty. Then it was reproduced in its more developed form, such as it was at Tiryns, for example, with columns between the antes,[1] and it was multiplied by itself, if one can so speak, by placing two megarons back to back. There was necessary a suggestion of the rear walls, but each of the edofices so attached, retained its prodomos, that became a pronaos. Whatever its dimensions, the edifice thus took an amplitude of appearance to which could not pretend the former palace, even where it was most vast. There was not in the temple a side that was sacrificed, as the case in the magaron. If one facade, ordinarily that turned toward the East, was distinguished from the other in that the wall of the pronaos was pierced by a doorway, that gave access to the interior of the sanctuary, the two facades were symmetrical and similar, with that exception. At a distance the eye of the spectator made no difference between them.

Note 1.p.351. Histoire de l'Art. Vol. VI, Fig. 83.

The innovation had its importance; still it did not seem to render the building worthy of the august guest, who must make it his house. Already the doubling of the vestibule gave more mass and effect to the whole; but the long walls forming the longer sides of the rectangle still remained c

cold and bare. To correct this defect, some one conceived the enclosing of the entire structure by a row of columns. This ornamentation with the multiple repetition of its supports separated by equal intervals, gave to the edifice more amplitude and effect; It seemed to make this lighter. It doubtless suggested to the Greeks the idea of calling that external colonnade a wing, from which the names of the temples, peripteral, dipteral, pseudo-peripteral, that designate the different arrangements that the inventive minds of the architects in time derived from this principle. These columns contribute to support a ceiling,whose elements rest at one end on the entablature borne by their capitals, and at the other on the wall that they adjoin. Thus is constructed entirely around the temple a covered promenade or portico. It has been asked whether the sight and the knowledge of the monuments of Egypt did not have some part in the creation of the Doric temple; perhaps the question does not admit of a sure solution; in any case we shall have occasion to return to it.

On nearly all Grecian temples, six columns are presented at each end by the external colonnade. That arrangement does not result from the caprice of the architect; even the principle of the plan imposes it. Two of the columns of the portico correspond to the two columns erected between the antes; two others are opposite the ends of the walls of the pronaos; finally there are two that terminate the rows of columns forming the lateral porticos (Fig. 168). The temple is then born a hexastyle, if one may so speak; and it will so remain always. We have to cite but very few exceptions to that rule, for example the temple T of Selinonte and the Parthenon, which are octastyle. It there concerns edifices that leave the common system and to which men desired to give a very particular character of grandeur and of luxury.

If one thought of erecting thus the column outside the temple so as to decorate the sides of the edifice, this was not to suppress it where it already existed in the interior of the great hall, that represented the ancient megaron;there it furnished the extent of the great room, and it supplied useful points of support for the wooden beams, that had to bear a heavy terrace.[1] The arrangement of the hypos-

hypostyle was then retained; but the architect continued to develop the plan of the edifice, brought these columns nearer the wall and increased their number, and thus he divided the interior into three aisles of unequal width, two of which were narrower and formed porticos extending along the side walls. With this double vestibule and this double colonnade, external and internal, the type of the Grecian temple is created; it already presents traits, that will define it in its most finished examples. The genius that produced it did not then proceed by a series of retouches and additions, as sometimes believed; it did not advance slowly from the simple to the complex. In this type the minds of the a architects will further introduce only variations of secondary importance. We shall record them as they are produced; but they will not have the effect of altering the character of the whole, such as it presents itself in the most ancient monument in which history can study it, the Heraion of Olympia.

Note 1.p.353. Histoire de l'Art. Vol. Vi. Figs.83, 305, plate XII.

There are not ended the relations that we have to point out between the Mycenaean palace and the Hellenic temple. Enlarged and embellished, the megaron has become the house of the god, who will be represented there by his statue, when sculpture has emerged from its infancy; but the altar on which will be offered the sacrifices in honor of the divinity that inhabits the temple remains where it was formerly in the enclosure of the palace; it is placed outside and before the temple, as it formerly was before the residence of the hereditary chief, both king and priest.[2]

Note 2.p.353. Histoire de l'Art. Vol. Vi. Figs. 83, 305, plate XII.

This altar is placed between the facade of the temple and a building pierced by one or more doorways, that announces afar the sacred enclosure and opens it to visitors. This is what is called the propyleion or propylea. It would have s seemed scarcely worthy of the majesty of the god for his house not to be preceded by an edifice, whose monumental c character warned the passer, that once passing this threshold, he walked on consecrated ground. We have found these propylea in Egypt, Phoenicia and in Judea, where we have t

termed them pylons.[3] But it is perhaps unnecessary to return to oriental models in order to explain their presence in G Greece. The feeling that suggested the adoption of this idea is that of every country; it is of all time; when he constructed his palaces, it dictated to the Mycenaean architect an arrangement, that his successors of the historic age have repeaded until in the Macedonian and Roman ages; the sole difference is that by the use of the nobler forms of a wiser art, they have given to these buildings a more elegant and grander appearance. Sometimes, as at Egina, Eleusis, Sunion and Priene, these propylea only give access to a single temple (Figs. 169, 170, 171). Elsewhere, as on the Acropolis of Athens and at Olympia (Fig. 172), by traversing them one enters an enclosure in which are collected several temples. They may be single, as at Egina (Fig. 169) and Selinonte (SFig. 173), or double,as at Tiryns (Fig. 174), Delos and E Eleusis (Fig. 170). Otherwise, in the less complicated arrangements as in those more so, the propyleion reduced its essential elements, consists of columns ranged in two rows in front, sometimes also of two longitudinal rows, and comprised between two great walls. This entirety is connected to the enclosing wall, and whatever variety is presented, one finds there always the type created by the constructors of the Achaian age. There is one of those close and undeniable resemblances, which attest the direct connect connection.

Note 3.p.353. Histoire de l'Art. Vol. I, p. 344-348; Pl. IV; Figs. 206, 207, 214, 218; Vol. III, pa 248, 266, Figs. 19, 199; Vol. IV, p. 281-286, pl. IV.

Then was made that transformation of the livil into a religious edifice, certain characteristic details having passed without notable change, from the original type to its brilliant derivative. Thus the prodomos of the primitive n house has become the pronaos of the temple. Under the simplest form, that affected by the Trojan house (Fig. 167), it had a simplicity that could lead to no development; but what served as a model for the classical architect and which furnished him with the facades of his temple is a wider prodomos of the royal edifice of the preceding age, that w where two columns stood between the two antes. The megaron of the Trojan house was covered by beams extending transv-

transversely from one wall to the other for the entire depth of the building. We shall show that covering in perspective (Fig. 175) and in plan (Fig. 176); we shall call A the length of the beams. Assume a hall of much greater dimensions, analogous to those of the palaces of Tiryns and Mycenae;[1] the width of this hall will be conventionally twice that in the preceding type. How did they succeed in covering that space? Nothing more simple. They take beams of equal length A, but placing them lengthwise, causing them either to rest on the wall separating the vestibule from the megaron, or on transverse girders of greater dimensions, placed at certain distances (Figs. 177, 178). No deflection is to be feared. Solidly built at the ends into the great walls, these girders found double points of support for their middle part either on the columns of the prodomos or on those of the interior of the vast hall (Fig. 179). This carpentry thus forms in the direction of the length of the interior a series of compartments, each of which consists of two girders, and by a series of beams more or less close. The appearance of the front varies according to whether one or the other arrangement was employed. In the first case, what one perceives from the exterior above the entrance opening was one side of the last beam, that nearest the exterior; in the second type the ends of the beams appeared above the architrave a and were opposite the spectator.[1]

Note 1.p.357. Histoire de l'Art. Vol. VI, pls. XI, XII; Figs. 302, 303, 305, 307).

Wood appears to have furnished in the temple the material of the most ancient columns, those of both exterior and interior. The column of the Mycenaean constructors was of wood,[2] and one has the proof that the architects of the first Doric temples began by remaining faithful in that respect to the customs of their predecessors. Pausanias found those old columns of wood again at Olympia, where they were shown and preserved as curiosities, not only on the site of a vanished structure, that had been the house of Oenomaeos, it was said,[1] but also in the temple of Hera.[2] Yet there must have been an early difference. The column of the vestibule and of the interior of the Mycenaean palace was connected to an architrave fixed in the wall at its ends. In these

conditions, the column, not only without inconvenience but even with advantage, could take the form of the leg of a chair, of an inverted conical shaft.[3] In the temple the portico surrounded the cella on all sides, and a certain distance separated the supports from the walls of that cella; it resulted that meeting at the extremities of each face of the portico, the architraves formed there a projecting angle whose apex was turned to the exterior. Two architraves then rested at the same time in a right angle on the four corner columns. There had never been anything similar in the Mycenaean megaron. The use of the peripteral arrangement, i.e., of supports accompanying the four sides of the cella, then completely changed the conditions of the stability of the column. With that arrangement, one was necessarily led to erect the trunk of a tree just as it was in nature, so that the column was at least as thick at its base as at its tip, or it rested on the ground at its largest part, whether cylindrical or conical.

Note 2.p.357. Histoire de l'Art. Vol. VI, p. 282, 286.

Note 1.p.358. Pausanias. V, 20, 3.

Note 2.p.358. Pausanias. V, 16, 1.

Note 3.p.358. Histoire de l'Art. Vol. VI, p. 320-321.

We shall state now and for what reasons the constructor was brought to substitute stone for wood in the column, and also elsewhere; but before entering into details in describing the temple and the different parts composing it, it remains for us to indicate in that edifice a last peculiarity, which is explained by the origin that we have attributed to it. In the great rectangular hall that the Greeks called the naos and the Latins the cella, we have recognized the megaron of the Mycenaean palace. When the god came to replace the king there, there was added an external colonnade in honor of the new master of the house; but this only surrounded the principal building; it had not become solidary. That is shown in striking fashion by the actual state of the temple of Segeste (Fig. 180). In that temple the portico or the pteroma, as the Greeks called it, entirely exists, while nothing remains of the walls of the cella. There was then no effective connection of these two parts of the edifice; the fall of one did not imply the destruct-

destruction of the other. There is a peculiarity that does not fail to surprise at first sight, but which is explained when one studies with some care the arrangement of that portion of the structure; as it is easy to verify, the sole c connection of the cella of the portico was the series of slabs forming the ceiling of this portico. That is made apparent by the adjacent sketches, which represent the pronaos of the so-called temple of Poseidon (Fig. 181) and that of the temple of Bassae (Fig. 182). It is a little different in one of the most celebrated monuments of Athens, in the pronaos of the so-called temple of Theseus; but if in that edifice the entablature of the pronaos extends even into the portico, this is because the architect desired to place there a frieze with continuous sculptures, and consequently to enlarge the field that he left to the sculptor (Fig. 133)

Note 1.p.360. This arrangement is not reproduced on the rear facade, where the shorter Ionic frieze extends only f for the width of the cella.

There can be no question of establishing a comparison between the height of the columns of the portico and that of the columns of the internal order. The latter being doubled in height, the elements composing them are necessarily of less dimensions than the supports of the external colonnade; but taking the value that the modern constructor attaches to perfect symmetry, we should have been tempted to expect to find a relation fixed between the axes of the columns of the portico and those of the columns that divide the cella into three aisles. Now this relation does not exist. The a axes of the internal columns do not correspond to those of the external columns, and do not fall at the middle of the interval between them. There is scarcely an exception but for the temple of Hera at Olympia; there the correspondence of the two series of axes is sensible on the sides (Pl. XII) In the same order of ideas, one will note that frequently the antes terminating the facade of the naos do not correspond in plan to the columns of the portico; thus on the temple of Zeus at Olympia that ante appears in the space of an intercolumniation (Fig. 134). It is the same on the temple R at Selinonte (Pl. 38).

Further see what shows better still how loose is the mat-

material relation that unites the cella and the colonnade surrounding it, the naos and the pteroma. There are temples, like the temple of Theseus and the temple of Zeus at Olympia where the architrave of the cell and that of the portico are found at nealr the same height above ground. In the temple of Poseidon at Paestum that correspondence no longer exists; the entablature of the naos is at a higher level (Fig. 185). The contrary is observed in the temple of Bassae. There it is the architrave of the naos that extends at a higher level (Fig. 186). The difference is still more marked in the same sense at Nemea (Fig. 187). If the naos and the portico are thus independent of each other, this is because the first of the two, which is nothing else than the ancient megaron, preexists in the second. The latter even when most developed always retains the character of a complement, of a brilliant ornament, and of a vestment that although cut to the measure of the body, can be detached from it. Yet the edifice has its unity, if not for the critic who takes it apart in pieces, still at least for the uninformed spectator, whose eye comprises it in a general and rapid view. That unitw is obtained in great part by means of the roof, that like a platform covers both the two parts constitutinm the temple and gives to that entirety the appearance of a single edifice, of an indivisible whole. It is also in the character of the execution. Everywhere in the portico as in the cella, the supports, mouldiggs and ornaments bear the mark of the same style and the same taste.

3. Transition from Wood to Stone. Temple of Hera.

Before beginning the analytical study of the stone temple it is proper to call attention to an edifice unique in its kind, the temple of Hera at Olympia. The heraion was the most ancient sanctuary contained within the sacred enclosure to which was given the name of Altis. A very particular veneration surrounded it as the first cradle of the worship of Hera and of Zeus, as the first monument in the shadow of which were celebrated those periodical solemnities, that ended in attracting to the banks of the Alpheus even the Greeks established at the most distant part of the Euxine or on the coasts of Gaul, of Italy and of Africa. More vast and sumptuous edifices were erected at length at the foot of

Cronion; but the ancient structure preceding them by several centuries had been maintained with care. Men had not failed to renew its elements as decay attacked them; but men endeavored to preserve as much as possible its primitive appearance. In the rear of the temple stood two colossal statues of Rera and of Zeus, a fragment of which, the head of Hera, was found in the course of the excavations; the place occupied by those images is still marked on the ground by the foundations of the padestals. Other works, especially those of archaic art, were grouped around those figures. Thus the opisthodome contained the celebrated chest of Cypselus, whose rich ornamentation offered to the spectator the combination of themes, that were most familiar to the artist of the 6 th century. Later, in the museum that each generation held it an honor to enrich, a more advanced art had brought some of its masterpieces; there was unearthed the Hermes modeled even by the chisel of Praxiteles.[1]

Note 1.p.362. We merely summarize in this Chapter the description so minutely exact that Dörpfeld has given of this monument. (Olympia. Die Baudenkmäler. Vol. I. 1892. Plates 18-23; text, p. 27-36). The adjacent figures are borrowed from the pales of that work.

Not without vivid regret does one read in Pausanias the long list of all those lost monuments; but had we found them again, the capital discovery would no less have remained that of the temple itself. The most important of the results produced by the German excavations executed from 1875 to 1881 at an expense of more than a million francs ($200,000)is still perhaps the uncovering of the remains of this old edifice, the revelation of its so peculiar plan, and of the methods of construction that had been applied to it. We esteem at its just value the marvellous statue, that an unhoped stroke of fortune restored to light, and of which only a very imperfect idea is given by the dull coldness of the plaster; but other marbles had already allowed us to divine the genius of the master, while in all researches undertaken on the soil of Greece, nothing had come to us to indicate what the Greek temple might be in the 8 th centurw, and of what materials it was built and the arrangements that it presented. One cannot doubt that the Heraion already existed from the

time of the first olympiads, with what there was asserted in the traits that characterized it, traits that were scarcely modified by later restorations. Perhaps it even dates earlier yet; at least so the architect is inclined to think, who has best studied all that remains of the monuments of the Mycenaean age and of the archaic age, M. Dörpfeld.[1] The adjacent elevations and sections give us an idea of the condition in which that edifice was found. (Figs. 188, 189, 190, 191). We have already shown the plan (Pl. XIII).

Note 1.p.365. Dörpfeld would be tempted to admit a basis of truth in the tradition mentioned by Pausanias, according to which the temple was built 8 years after Oxytes obtained possession of Elis, i.e., according to the chronology generally accepted, about the beginning of the 11 th century. ((Olympia. Textband II, p. 35,36).

Without entering into details, we shall limit ourselves to indicating those characteristics of the primary construction not effaced by later restorations, and that besides t the text of Pausanias, are verified by the careful examination of the ruins of the temple.[2]

Note 2.p.365. Assuming the point of view on which we place ourselves here to study the temple ofHera, we do not restore certain peculiarities, that have their importance, as for example, those little transverse walls that connect to the walls of the naos eight of the shafts of the internal colonnade, and which those constitute along the latter walls on each side, as it were, four rectangular chapels and a little niche. We shall have occasion to return to this temple.

These characteristics reduce to three principal ones.

1. The columns of wood that formed the pteroma.

2. The crude brick walls of the cella, that rest on a s substructure of cut stone.

3. The wooden timbers or planks covering the jambs of the doorway and the antes of the pronaos.

It is self-evident that there has been found not the least fragment of a wooden column; but if before describing the monuments of sculpture contained in that cuseum, Pausanias had only said a few words about the temple itself and its architecture, yet he inserted a very curious statement. He writes,"one of the columns of the opisthodome is of oak

wood." The opisthodome is here the rear pronaos.

One could already deduce from this text that the column mentioned by Pausanias was the last survivor of numerous smiliar columns; does this represent a temple in which the colonnade was equally divided among those of stone and of wood? The excavations have completed the demonstration; they have supplied the proof of most and at least all the stone columns. From observations to which these remains have given rise, it has clearly resulted that the columns found are not contemporary with each other.[1] They are neither alike in diameter, in the number of flutes, nor in the capital. In the profiles of that last member are the most marked differences. There are capitals , some of which appear to date from the 6 th, others from the 5 th or the 4 th centuries; and some from the Roman epoch. There is only one way to explain such evident variations. In their attachment to the past, the piety of the Eleans endeavored to preserve as long as they stood on their bases the ancient wooden columns. At need they employed columns, as had been done for the pillar of the house of Oenomaos. It was only when a shaft of oak by its state of decay threatened to fall, that it was decided to replace it by a shaft of stone. A century after the visit of Pausanias, one would probably have no longer found that last evidence of the ancient construction, where the traveler had seen it; time must have brought it to an end.

Note 1.p.366. Dörpfeld. Olympia. Vol. II. pl. 20, 21; textband II, p. 28-30.

Except the difference in entasis, this column is that which we have everywhere restored at Tiryns and Mycenae, according to the traces left on the ground, under the form of a plinth or disk of stone, that served as a support for the wooden shaft.[2] We shall state why one finds at the Heraion no vestige of these rudimentary bases, that here in the first state of the temple must have existed beneath the oaken columns.

Note 2.p.366. Histoire de l'Art. Vol. VI. p. 518.

The construction of the cella presents peculiarities no less curious. There remains only a foundation of dressed s stone. Now the nature of the rubbish removed from the interior of the temple and its surroundings confirms a hypothe-

hypothesis at first suggested by the uniform height everywhere shown by this wall and by the absence of all marks of fastenings on the top bed of the upper course, the entire remainder of the wall was of crude bricks, as in certain edifices of the preceding age.[1] Nor has any stone been found whose cutting indicated that it formed part of the entablature.[2] This was then entirely of carpentry as at Mycenae. That is what must otherwise be expected. How could wooden columns support a stone entablature?

Note 1.p.368. Dörpfeld. Olympia. Textband II, p. 31.

Note 2.p.368. The same, p. 30.

Even after the gable roof was substituted for the ter ,
the edifice must have had but a moderate height. The slope of the pediment is given by the antefixa remaining; and by using that indication and reducing to a base of equal length the temple of Hera and that of Zeus at Olympia, the adjacent diagram is obtained, from which it results that the Heraion was lower and of more squat proportions than will later be the hexastyle temple (Fig. 192).

Let us return to the foundations. If the eye of the passer merely glances at it, the observer finds there matter for reflection. Seen from within the cella, this tufa wall consists of four regular courses, one of which is almost buried in the soil (Fig. 193). Seen from outside, it presents an entirely different appearance. The external face is made of great stone slabs set side by side, each of which had the height of the four courses for which it served as a facing. (Fig. 195).

This is truly a singular method of construction. One does not understand at the first moment why the masonry does not frankly appear on the exterior as in the interior. Thus set on edge, the slabs do not bond with the wall but risk being detached from it. If the workmen adopted this method, it is because in the houses and palaces of prehistoric times their predecessors must have employed these slabs of stone to protect the base of the wall, of a wall made of clay bricks or of rubble connected by a mortar of mud.[1]

Note 1.p.369. Histoire de l'Art. Vol. VI. p. 729.

It is the same for the antes and the jambs of the doorway of the naos. The antes are of stone; but on their front and

internal surfaces one notices grooves in which were fastened the planks and the blocks on which were fixed by nails the planks concealing the mass of tufa. In the adjacent sketch to illustrate how this facing was arranged, we have restored some of those planks (Fig. 194). For what did they serve? The stone is harder than the wood. If it appeared in that place, this is because it occupied this in the earlier buildings, where this screen protected the projecting ends of walls of crude bricks.[2] Without that defense on that sort of projection beaten by rain on three sides and exposed to all shocks, the masonry would not have delayed to disintegrate. Besides, here this facing was useless by reason of t the peripteral arrangement; the antes were sheltered by the portico.

Note 2.p.369. Histoire de l'Art. Vol. VI. p. 500-502.

These grooves arranged in the tufa are found on the blocks forming the sill and casing of the doorway of the naos: they could only serve to receive a horizontal piece by means of which was effected the connection of the stone and the wood. (Figs. 194, 195, 196). The stone threshold bears the marks of nails: one recalls the sills of oak or ash mentioned in Homer.[1]

Note 1.p.370. Histoire de l'Art. Vol. VI. p. 502,503,512.

Was the wooden covering at the antes and the doorway ever covered by a metal? Did sheets of bronze serve to render t that trimming both more resistant and more ornamental? One does not know and it matters little. What forms the interest of the peculiarties mentioned is the conclusion that these authorize; when the hexastyle temple was created, the constructor still remained faithful to the methods of the Mycenean age, and on the other hand, if he applied them, this was not because they were justified as before by practical needs. He obeyed one of those habits that survive the circumstances and requirements that produced them; he docilely followed one of the traditions transmitted in the trades as a heritage from generation to generation.

Then the Heraion of Olympia is what may be termed a transitional monument. By it we divine how the architect passed from the megaron of the Achaian kings to the temple of stone; by studying it can one explain how certain arrangements, t

that characterize the buildings of the earlier peeiod, are preserved in that edifice by the effect of routine.

4. Analytical Study of the Stone Temple. The Doric Templ

Stone enters into the construction of the Heraion for but a small part; the chief role there devolved on clay and wood. Now it is not with such materials that the architect could ensure the duration of the temple and thus render it worthy of the occupant for which it was intended. Such an architecture could only be a transition architecture; while it employed no other resources it never succeeded in expressing by the entirety of the forms that it essayed to create, the i idea whose sensible expression it sought, that of divine m majesty and permanence. Chiefly built of rubble, crude bricks and wood, the temples had but a limited and precarious existence. In spite of the plastering applied to restore it, the rain cut into the crude bricks; it rotted the wood, that the extreme heat cracked in a different season. In such conditions, it was also difficult to attain the beauty of lines as in the solidity of the work. Neither the rubble nor the tamped earth lent themselves well to the execution of the mouldings. Those could appear in the wood beneath the chisel or the gouge, but they always retained their dryness there; their profiles were soon injured by the dampness. Only the stone with its close grain could give the contours of the forms an amplitude that satisfied the eye, and could preserve for it indefinitely the character of nobility impressed on it by the tool. That had already been understood by the Mycenaean artist. If in the palace, a temporary edifice, he rarely employed anything but wood, but in the domed tombs that became eternal dwellings, he used stone and chiseled on it a rich decoration. He could not delay to seize the a-advantages of stone as soon as, to satisfy some social need, he commenced again to build important edifices that should cover a great area of ground. Over those interiors it was necessary to extend wide roofs; did not stone furnish supports better suited than trunks of trees, never to bend under those heavy loads? These simple reflections must suffice to suggest to the constructor the idea od modifying his habits; but it is possible that the example of Egypt may have contributed to push him into the new path. The most ancient tem-

temples with stone columns and entablatures known to us do not date beyond the 7 th century; most are of the 6 th. That is the time when the Greeks began to frequent Egypt; they establish agancies in the Delta; as merchants, mercenaries and inquirers, they ascend the valley of the Nile; they contemplate the enormous pylons, the long series of porticos, the lofty hypostyle halls. The admiration that they experience at that sight does not make them faithless to their n national traditions' but before those grand monuments, all built of beautiful limestone and granite, **perhaps** sooner a and more vividly than they would have done without this view of the marvels of Egypt, they felt the special virtues of the stone, how it alone could give to the entirety that air of powerful solidity, that seemed to them to promise a duration without end, and it ensured to all profiles that firmness of line without which there are no harmonious proportions and expressive beauty.

Such were the reasons that caused the rapid abandonment of the former methods, the architect thus foond himself placed in conditions, that differed greatly from those in which his activity had been exerted until then; the change in material implied a change of forms. As these forms appeared in the oldest Doric temples, and as they were maintained to the end with very slight variations, are explained by the transition from wood to stone, by the properties of stone, and by its requirements and its merits.[1]

Note 1.p.372. See Ch. Chipiez. Histoire critique des ordres grecs. P. 239-240.

The use of cut stone allows the placing of the edifice on an ample and strong substructure, a part of which is in the ground and forms the doundations, while the rest is above it and forms the stylobate. ("On which rests the columns."). The stylobate is a mass of masonry interposed between the ground anf the foot of the walls as well as that of the colonnade. This mass, measured at its base, covers a surface whose dimensions exceed in all directions those of the area occupied by the structure of the temple. Thus it is limited in height by two horizontal planes of unequal extent, connected together by broad steps. The entirety of this base t then has the character of a truncated pyramid, but whose s

slopes are concealed beneath the projections of these steps. This substructure isolates and elevates the temple; it plays the part of a majestic pedestal that raises it above the heads of the multitude and points it out afar to the eyes.

We have stated elsewhere from what need originated the base of the Mycenaean column.[2] It was necessary that the lower end of the wooden shaft should never be wetted by the dampness of the ground; for this served the found stone disk found in place in the edifices of the Achaian age, wherever there were columns with the stylobate that need disappeared. Itself being placed on the thickness of the foundation, the stylobate suffices to protect from contact with the wet earth all the construction that it supportr; thus it plays the part of a base common to all the supports. If henceforth the architect gives a base to his column, this will be for reasons of sentiment and of taste; no necessity of construction compels him.

Note 2.p.372. Histoire de l'Art. Vol. VI, p. 521.

The creators of the Doric architecture did not thus complicate the form of that support; besides they were not incited to this by models under their eyes. The Mycenaean base was never more than an insignificant plinth not exceeding a few inches above the ground; the capital alone of that column had any importance. The architect then neglected that thin slab, which had become useless to him; he has contented himself with taking the Mycenaean shaft, if one can so speak, inverting and replacing it. That had as a base its least diameter; its top was enlarged to present its largest area under the architrave. Thus is the inverse phenomenon produced when the column is cut in stone; it is then it is larger near the ground than where it meets the capital. Why this method was taken is easily understood. If one replaces wood by stone in the column, this is that it may be more suited to bear a heavier load; it is necessary that the form to be given to the shalf be calculated so as to make it as stable as possible. Now it is the conical form that ensures the most perfect stability to the pillar; as the eye divines and as statics demonstrates, the cone has a firmer bearing than the cylinder comparable to it. The first Doric column was then a truncated cone, cut off far from the vertex;

thus was given to it a short and squat height that increased the resistance (Fig. 197). On the column of the old temple at Corinth the ratio of the height to the greatest diameter of the shaft is nearly 4 to 1; the column hardly has more than 4 diameters.[2] That column is monolithic like the trunk of a tree that it succeeds. It is the same at Syracuse in the so called temple of Artemis, which itself is very ancient. (Pl. XIII).

Note 1.p.373. Histoire de l'Art. Vol. VI. p.51.-529.

Note 2.p.373. The exact proportion for the columns of the facades is 1:4.2, and for those of the long sides, 1:4.4. Dörpfeld. Der Temple in Korinth. Athen. Mitt. 1886.p.304).

Taking the rigidity of the stone of the form taken by the column, it was no longer necessary for it to have as much material beneath the capital as the wooden column; but on the other hand, it would not have sufficed for the column, that diminished in ascending, to have by means of the capital the diameter that it had its foot; it was necessary for this capital to have the form of a slab to receive on its entire breadth the under surface of the architrave; this was the role of the abacus. To connect that abacus to the shaft, more detached than before, one must enlarge the curve of the interposed moulding of this torus or cushion, the abacus, that we have already seen appear at the same place on the Mycenaean column. Thus is obtained a capital, that is composed of the same members as that of the primitive column, but expands more boldly and offers a firmer and nobler profile (Pl. XVIII).

If the wooden column could only bear a wooden architrave, the column of tufa called in the same fashion for a stone entablature. Long blocks of tufa, a true beam of stone, will henceforth fulfil the function of the architrave. (Fig. 198).

But in passing from the megaron to the principal temple, the architrave of epistyle has suffered a notable change in condition. In the vestibule of the megaron, if the architrave be supported at its middle on two columns (Fig. 177), both ends rest on the side walls, where it is engaged in the masonry (Fig. 179). It can no longer have these walls as supports in the temple, where the portico is independent of the cella, and instead of extending only on the facade, it

runs around on the four sides of the building above the colonnade. Two architraves meet at each corner of the edifice, whose ends can rest only on the angle column (Fig. 193). They are not assembled like two timbers; they are only abutted at their ends; but they have the benefit of stonecutting, that allows the two concurrent architraves to be represented on the abacus by nearly equal areas. This cutting at the same time offers the advantage, by its reentrant and convex angles, of rendering the contact more perfect between the two adjacent cuts.

On the architrave was supported the frieze, the origin and function of which we have had occasion elsewhere to indicate. This in its entire extent on the four sides of the pteroma is ornamented by triglyphs, that separate rectangular panels termed metopes.

Note 1.p.377. Histoire de l'Art. Vol. VI, p.697-698, 711-714, 722-723.

The frieze was surmounted by the cornice, and had as purpose to support the roof and to cast the rainwater to a distance. There again the architect has made a work of art by adopting the forms of the primitive carpentry, that enclosed and sustained the earth roof; he gave to it a happy appearance by the proportion arranged between the different mouldings composing the entirety, between the height and projection assigned to each of these; by causing the mutules placed over the triglyphs to correspond to the guttas set below the same triglyphs, he put into his cornice the movement and rhythm, that singularly increased its effect. Mutules and guttas, as we have shown in a preceding study, are a memory of the pegs that in a wooden entablature hold the boards used to cover the joints;[1] Here both only play a purely ornamental part.

Note 1.p.378. History of Art. Vol. VI.p.715-718.

The members of that entablature recall the wooden timbers that represent a horizontal covering in the Mycenaean habitations of the most developed and most advanced type.[2] The triglyphs there occupy in the frieze the place of the decorated facing that protects the ends of the beams placed on the epistyle; to the voids existing between the ends of the beams , spaces closed by planks or stone slabs correspond

to the metopes.

Note 2.p.378. Histoire de l'Art. Vol. VI. Pl. XI.

Like the beams in the megaron, the triglyphs around the cella of the hexastyle temple only belong to the front and rear of the walls (Figs. 181, 182); the series are not continued along the sides of the naos (Fig. 200). On the contrary, one sees on all the temples that they form a continuous series on the four faces of the portico, as well on the lateral faces as on the two fronts. What are they doing there, and how can one explain their presence in that place? They do not represent a real framework there, where the wood is changed into stone. That is easily demonstrated. The members of the framework that rest on the entablature of the portico only extend above the frieze at the height of the cornice (Pl. VI, 1). Further, the members of the framework do not extend through this wall; the system of beams composing it do not appear by any sign on the exterior; in the interior alone has it left a trace in the recesses in which are inserted the ends of the beams (Pl. V). Further, to return to the wooden temple, such as might have been the primitive Heraion, would one have the beams crossing the space of the portico show their ends externally? In this temple the portico must be covered only by planks, since in the s stone portico it is only covered by simple slabs. Finally, it should not be forgotten that the entablature of the pteroma is not placed at the same height as that of the naos. If then by hypothesis, one insists on regarding the triglyphs of the frieze of the portico as the terminations of the beams of the former carpentry, let one atteppt to restore those beams, to extend them from the facade in the direction of the sanctuary? They will not correspond to the triglyphs of the frieze of the pronaos; now as we proved by referring to the vestibule of the Mycenaean house, these correspond to the ends of the beams that support the covering of that vestibule; they are the only ones able to enforce their right to be regarded as representatives of the beams. For example, if one performs for the temple of Bassae, the operation that we have indicated, he discovers that those assumed beams will fall on the upper parts of the triglyphs of the pronaos (Fig. 201). They cannot be the prolong-

prolongation of those, whose ends are represented by the s same triglyphs. There is a reduction to the absurd, whose effect it is difficult to deny.

A last remark completes this demonstration in all the Grecian Doric temples; there is a triglyph at each angle of the frieze of the portico; now the post with a wooden roof did not comprise a beam set in such a manner as to furnish the form of the angle triglyph. It is easy to assure one's self of this by restoring a Mycenaean portico, such as extended around the court of the palace of Tiryns; we show it in the plan (Fig. 202) and in perspective (Fig. 203). One would n not obtain this angle triglyph without difficulty in wooden construction, as shown by the adjacent diagram, that presents for the carpentry of the portico of the Heraion two different modes of restoration (Fig. 204). The first arrangement is indicated at the left and is the most simple, what one might term the normal arrangement; but it does not furnish an angle triglyph. To obtain thes triglyph, it would be necessary to resort to that shown at the right. Doubtless it would not present to the carpenter difficulties in execution that could stop him; but if one attempted to apply it to a real temple like the Heraion, he would strongly hesitate to believe, that in practice this method was ever undertaken by the artist. The resulting ceiling gives an ungraceful arrangement, that one is truly in error to attribute to the Greek constructor, when one refers to the type, everywhere the same, of the ceilings preserved in some of his templ

The conclusion suggested by these observations has already been divined. The forms that characterize the Doric entablature has its antecedents and its origin in the system of c construction in wood; but it does not result from direct o borrowing,from a faithful and servile reproduction. It is by the sole effect of a very free copy, and intelligent copying, that the elements of the primitive carpentry are recalled in the stone temple, where they are without contact or connection with the system of the actual carpentry. There the architecture of the pronaos has for a principle the figured imitation of the frontispiece, which in the course of the heroic age indicates to all eyes the house of the n hereditary princes, protectors of the city. By their dimensio

the edifices of that importance, in whiln all criefs of families gathered for deliberations and the common festivals, required the use of the powerful epistyle, thrown over a w wide vestibule open in front, and that use implied the arrangement where the frieze is divided into triglyphs and metopes. Those forms in themselves contributed to characterize the royal residence. That explains why one held to retain them in the temple, the august dwelling of the divinity, and which they even extended the application to parts of the m monument, where no necessity of construction appeared to r require its presence. One is not contented to retain them on the fronts of the two pronaoses, where their places were all indicated by tradition; they were also attributed to t the entablature of the portico, where they figured at fixed places and as purely ornamental. We can cite no more curious example of the independence with which the Greek genius has resumed the themes furnished by either the exotic models by which it was frequently inspired, or by its own past, its works of infancy or youth; it was always inventive, even in the imitative.

That alternation of the triglyphs and metopes, when it t thus assumed in the portico the character of a simple motive of ornament, has become even the abstract type of the Doric frieze. To this standard that one refers both to the frontispiece and to the lateral facades of an edifice such as the treasury of Sicyon, a true ante temple. (Pl. XIX,2). There, if one refers it to the type of the megaron of small dimensions and covered by transverse beams (Figs. 175, 176), it is only at the sides of the building that will appear t the beams; then they will not show on the facade,and consequently will not afford any pretext for inserting triglyphs there. If on a small edifice, and the triglyphs decorate t three sides of the edifice, they represent there no element of the earlier construction; at the top of those walls of the treasury, they are only a traditional decoration.

In that frieze of the portico which is no more than an o ornamental decoration, the metopes are generally almost square, except in the vicinity of the angle triglyph, where it was sometimes necessary to enlarge or reduce the area in order to place the motive. Thus by the use and repetition

of the square form was created a very peculiar rhythm, in which the eye found pleasure. It is not the same in the frieze of the pronaos of the hexastyle temples. The metopes are there very frequently longer than high.(Fig. 205). That peculiarity only requires explanation. On the front of the cella the triglyphs correspond to the ancient arrangement of the carpentry; now in that carpentry the intervals left between the ends of the beams were originally oblong, as in the alabaster frieze at Tiryns. The rectangular form quite naturally passed into the first friezes in which stone replaced wood, and by habit it was sometimes reproduced when already far from the time when that substitution was made.

In the most ancient temples, the entablature exhibits a height that does not fail to surprise the eye; in the temple of Poseidon at Paestum it forms 3/7 of the total height up to the beginning of the roof (Fig. 206). In time that n height will diminish; it is much less in the later edifices. Taste has become more refined and can find more charm in a different proportions; but the principal reason for that change must be especially sought in a prepossession, which must be obeyed by those that constructed the first temples of stone. The supports of the external colonnade were not between the antes, like those standing in the vestibules, connected by the architraves to the walls of the cella. They were held upright only by their own weight, and one a had reason to fear that the least shock would throw them to the ground. To increase their stability, it was natural that one should have the idea of loading their tops, as done with struts on the tops of which is placed a great weight. This result is obtained by laying a very high entablature on the capitals, and consequently very heavy. In use, they discovered that due measure had been exceeded. By the precautions taken and the care with which the drums were adjusted, the column was stable by itself. Then after this experience, they believed that they could lighten the crown of the edifice, and thus give it a less massive and more elegant appearance.

Above the entablature was a wall at the two ends of the temple, in the form of an isoceles triangle, into which are

inserted the principal timbers of the carpentry sustaining the roof that removes the rainwater (Pl. VI, 2, 3); this is termed the pediment. The cornice by its service being everywhere indispensable is continued and simplified on the slopes of the pediment; but it is alone there; in a very strongly projecting member that encloses and protects this tympanum, nothing recalls the carpentry; neither modillions, triglyphs nor mutules. (Pl. VII, D). This is because this wall did not exist in the time when the roof of the structure w was entirely made of wood and terminated in a terrace.[1] On the edifices of Mycenae were no pediments. On the contrary, the horizontal zones of the entablature presented there the very clearly characterized forms that we shall know by the classical architecture; these forms have been retained in the stone temple while adapting them to other materials. As we know it, the pediment with the characteristic arrangement that it presents in the edifices of the classical age, properly belongs to the stone temple; that is why nothing indicates there the survivals, that we have indicated in the architrave, frieze and cornice.

Note 1.p.383. One can object that the temple of Hera, all whose upper parts were of wood, seems to have had two pediments, judging from the great acroteria whose fragments have been found, built before the gable roof; but it is probable that this roof and the pediments did not belong to the primitive construction. The edifice was too ancient for it not to be necessary to undertake more than once works of restoration, that could not fail to change in a certain measure the character of the building. Just as were replaced one after the other the wooden columns by stone columns, when men had to rebuild the roof, injured by time or destroyed by f fire, there was given to it the arrangement that in the interval had become the current usage. Perhaps after certain experiments, for the terrace was substituted the roof with two slopes, to which corresponded on the two facades the pediments, that were surmounted by acroterias of painted terra cotta; those at earliest were of the 7 th century. (Dörpfeld. Olympia. Vol. I of the explanatory text. p. 36).

One knows what part Grecian statuary took in the pediment, when the architect left a field to it, when he desired to

group the images of gods and heros there, placed high above the colonnade and the powerful cornice, magnificently enclosed within a rich border. Even when the pediment remained vacant, its wide base and its ascending lines from the most majestic crowning for the edifice. After the gaze of the spectator has left the ample and firm substructure, after having followed the ascensional movement of the robust columns, and after passing over the varied ornamentation of t the entablature, rises with the double inclined coping to the summit of the temple, and there it finds a point of stopping and repose in the acroteria, i.e., eo the ornamental form or in the figure that surmounts that vertex, and is detached against the blue of the sky. The same slope continues along the lateral facades even to the crest of the roof, marked by a long row of ridge tiles. Finally, to arrange on the temple a covering entirely impermeable to water and one more durable, they had recourse to the roof with two slopes; but this roof also had the advantage of terminating the roof better than the terrace, of giving it a nobler and bolder appearance.

Between this roof entirely covered by clay tiles,that will later become marble slabs, and the rustic terrace of the Mycenaean building with its scarcely perceptible inclination, there must have been another mode of covering, an intermediate type, the terrace in two slopes inclined toward the l lateral facades, a type born when the industry of the potter in developing allowed the constructor to use tiles. (Fig. 207, right). Between the end of the Achaian age and the 7 th century was accomplished this advance. As soon as they had tiles, men did not fail to employ them to cover the terraces to better protect the tamped earth composing them, and at the same time increasing the inclinations in order to make the removal of the water more rapid; then was commenced the designing of the wall of the pediment in the principal facades. Experience did not delay the suggestion of a perfecting of the system; one recognized that it was useless to impose on the walls and the other supports the burden of a t thick layer of clay, and they came to place the tiles directly on the carpentry, on the rafters covered by a layer of battens. Then even when this was the procedure generally e

employed for constructing the roof, men sometimes returned to the primitive method in works that required rapid execution. In 323 Athens decided to rebuild its walls. We have the decree issued on that occasion and the specification of the works to be undertaken; now it results from that description, that in the covering destined to crown that wall, the tiles must be placed directly on a bed of tamped earth. (Fig. 207, left).

Note 1.p.387. Choisy. Etudes epigraphiques sur l'architecture grecque. II, p. 70.

When he had created the temple, the architect found in t the ceramistsas ingenious auxiliary, fertile in resources; the latter not only aided him in covering the temple, but also inplacing on certain parts an ornamentation, that it seemed must forever preserve to it that air of elegance and freshness, that the people desired to impart to that signal monument of its piety. In countries where the quality of t the stone left most to be desired, they made most general use of this procedure, that was applied most bolidly to the decoration of the largest temples. If the principle of the Greek temple is the same everywhere, there are still sensible differences between the temples erected in Greece proper at Corinth, Olympia, Egina, Athens, and those of the distant colonies. The temples of Greece oveeseas have been relatively more spared by time. Outside Athens is no site on the s shores of the Egean sea, where are collected in imposing g groups edifices so well preserved as those of Paestum and of Agrigente; but no less do we regard the temples of Attica and of the Peloponnessus as the true types of the monument, which was the masterpiece of the plastic genius of Greece. The plan is there more clever and more rational, t the proportions there are more harmonious; the material is there most beautiful and the details more careful. There a and there alone does one find edifices, as in the temple of Zeus at Olympia and particularly in the Parthenon, where t the statuary has lent his aid to the architect to people with living figures all spaces where he could find room. Further,not that alone distinguishes the temples which one can term unusual; one finds there either in the plan or in the elevation variants that attest the efforts imposed by

Grecian genius to give to each of its works a personal character, while retaining the entirety of the traditional principles. We cannot undertake to notice all those peculiarities. The best means of making their importance sensible is to call attention to the plates, in which we have collected at the same scale the plans of 29 Greek temples. (Pls. XIV to XVIII). These plates require some brief explanations.

The first (Pl. XIV) groups the temples belonging to what we term the first type. That recalls most faithfully the megaron, and is its most direct descendant; it is characterized by the portico surrounding it and by the 6 columns that its principal facades present, by its double pronaos and its double internal colonnade. The latter is also doubled in height. In all temples of that category, except at Bassae, the lower tier serve to support the floor of the galleey e extending along the two larger sides of the cella, a gallery reached by stairs, whose fragments have remained in several edifices.[1] The column of the upper order beyond the architrave is the polongation of the shaft of the lower order; it continues the lines. At least that has been proved in the temple of Poseidon at Paestum, the only temple in which some of those columns are yet in place (Fig. 303).[1] It is probable that this was the same eveeywhere; but elsewhere the little order was found only in the state of fragments lying on the ground.

Note 1.p.338. There are notably traces of these stairs in the temple of Zeus at Olympia, in the temple of Poseidon at Paestum, and in three temples of Agrigente; the temple of Concord, the temple of Juno Lucina and the temple of Esculap

Note 1.p.391. Labrouste. Temples de Paestum. 18//. p. 8, with figures in the text.

One finds but. 8 Doric temples divided into three aisles by an internal order, the six hexastyle temples represented on this page, the Parthenon and the temple T of Selinonte, which are octastyle. If we have joined to this group the old temple of Athena on the Acropolis, this is because the state in which has been found the masonry removes the doubts concerning the internal arrangement of the cella. The two walls bordering the oblong room forming a sequence of the eastern pronaos appear to have been made to support col-

columns; perhaps there were two of these on each side, as there were four at Corinth in the hall, that forms the front and principal part of the naos (Pl. XIX).

The second type (Pls. XV, XVI) is that composed of much more numerous temples, that have no columns in their cellas; otherwise they resemble for the rest the temples of the first type. Why was not an arrangement retained, that in Greece proper seems to have been transmitted by Mycenaean architects to the constructors of the most ancient temples? No one knows; but what is certain is, that the presence or absence of that colonnade has nothing to do with the dimensions of the edifice. Where are lacking these supports arranged between the two walls, the establishment of the carpentry seems to become more difficult, and yet in temple R at Selinonte, and the so called temple of Hercules at Agrigente (Pl. XV), where the cella is as wide as in the temple of Poseidon at Paestum, there is no internal colonnade. Then on the other hand, the temple of Theseus and that of Egina, which are smaller and more easily covered, without the aid of these points of support; they are lacking in the temple of Theseus, while we find them in the temple of Egina. What is striking at the first glance on these plans is, besides the peripteral arrangement everywhere adopted, the fact that all these temples, whatever their size, are uniformly composed of similar elements externally. With but two exceptions, at least on the facade these are composed of the same number, and this number varies on the sides only within very narrow limits. The area of the temple of Egina scarcely represents one fifth of that of the temple of Zeus at Olympia; now like the great temple of Olympia, the temple of Egina has six columns in front and only one less at the side. These elements enlarge or diminish according to the dimensions that the architect desired to give to his work; but they always retain the same proportion to each other. That constancy with which Grecian architecture undertakes to reproduce thus a type always the same is one of its original characteristics; its entire system of proportions comes from that.

With regard to colonial temples, we shall indicate some of the peculiarities presented by certain temples of the second type; others will be noticed in their places, when

we draw up by centuries and countries the list of edifices that represent the evolution of Doric architecture. On a s separate page (Plate XVII), we have placed the only two temples of this order, that have eight columns on their principal facades instead of six, the Parthenon and temple T of Selinonte, which otherwise differ in so many respects. This addition of two columns on the facade could only be inspired by the desire to give a grander appearance to that entirety. To a purpose of the same kind must one attribute the singularity of the plan of this temple of the giants at Agrigente that the opulent city had neither the time nor the means to terminate. (Pl.XVIII). If we have placed it in this series, that is to render sensible the infinite diveesity of the c creations of the Greek architect.

One will note in glancing at the series of peripteral temples, that the columns along the sides are most frequently in an odd number. This number varies from 11 on a temple at epidauros to 17 on the Metroon at Olympia, a number only attained on the largest temple of Selinonte.

We have added on the margin of these drawings (Pls. XVI, XVIII) the plans of some ante temples and a prostyle temple, with two monopteral temples on rectangular or square plans. The type of the ante temple is that which we shall study in the treasuries. An edifice recently discovered at Selinonte presents a curious variant from it (Fig. 209). No columns between the antes; nothing but a great hall preceded by a vestibule. The two transverse walls are terminated by clearly characterized antes, where interrupted by the doorways. The whole forms a rectangle 66.3 ft. long by 27.8 ft. wide. This interior has the ordinary orientation of the temples, and according to the place that it occupies behind the propyleum that had been uncovered a short time before, the a author of the discovery inclines to think that the building could only have a religious purpose. As for the type of the prostyle temple, it especially belongs to the Ionic order; but ante temples, prostyle and monopteral temples are of t too small dimensions, and most of them are of too late an epoch, that one could think of seeing in them the organic predecessorsoof the great peripteral temples of the 7 th a and 6 th centuries. One will no more seek these the protot-

prototypes of those spacious and imposing edifices, than he would seek in the rustic chapels scattered over our coasts and among our forests, the little models of the Romanesque basilicas or of the Gothic cathedrals of our great cities.

Of all the colonial temples, the temples of Paestum are those which most resemble the temples of Greece proper. T The differences are based only on secondary details. The plan of the temple of Poseidon is nearly the same as that of the temple of Zeus at Olympia. One of these temples, that called the temple of Demeter, presents a very exceptional arrangement; this temple has only a single pronaos, and in that instead of two columns between the antes, there are f four columns placed before the porch. Two of these supports correspond to the ends of the walls of the cella, and two others to those that usually stand between these projections of the structure (Fig. 210).

At Selinonte are as many as seven temples, which form two distinct groups, that of the acropolis and that of the eastern hill (Fig. 211). For lack of knowing to what deity each of them was consecrated, it has been customary to designate them by letters;[1] we conform to that usage. At Selinonte we meet with a sort of first sketch of what Vitruvius calls p pseudo-dipteral, a type that he declares he did not see in Rome, but that he difined from Ionic edifices of Asia Minor, a temple of Magnesia on the Meander, and a temple of Alabanda.[1] What characterizes these for Vitruvius is that the portico has there a single row of columns and the same width, as if the colonnade were doubled as in the dipteral. This proportion is not attained in the Doric temples of Sicily, where this tendency to the enlargement of the portico is m marked. The effect thus obtained was perhaps happier than that where the architect had adopted a more absolute system.

Note 1.p.395. We have adopted the nomenclature of Hittorf, that extends from D to R, we know not why. (Architecture a antique de la Sicile. Recueil de monuments de Segeste et de Selinonte. Measured and drawn by J. Hittorf and H. Zanth. 1870. With atlas of 89 plates). Other learned men, like Benndorf (Die Metopen von Selinunt, 1877, follow from A to G the order of the letters of the alphabet.

Note 1.p.396. Vitruvius. III. 2-8, 3, 8-9.

In temple T the columns are farthest from the wall of the cell (Pl. XVI); but the tendency thus to enlarge the space is found more or less marked in other temples of the same city, thus for example in temple D (Fig. 212). Vitruvius attributes to Hermogenes of Alabanda the invention of the pseudo-dipteral, whose theory he explains according to the Meoir of that master, a contemporary of Alexander the Great, in which he describes the edifices that he had built in Ionia and in Caria; he did not suspect that Hermogenes could have found in earlier monuments the idea of the arrangement, that he applied to the Ionic order.

The ruins of Selinonte likewise offer examples of a singular arrangement, that one finds nowhere else; we speak of these two temples C and S, where the antes are wanting (Pl. XVI). What precedes this sanctuary is a vestibule reached by an opening, whose width is the same as that of the doorway of the naos. Here is no longer anything that recalls t the facade of the megaron; one would say that is the front of a house. The architect has striven to lessen the defect. T These columns that he has taken from the porch, he has increased in number and has transferred outside in the peristyle. At one end of the rectangle and opposite the entrance, he has enlarged the portico and doubled its supports. Thus he believed that he had found means to give his temple a m monumental facade in a different manner. This same doubling of the colonnade before the entrance is found again in a v very archaic temple, in the so called temple of Artemis at Syracuse; but there the ends of the walls play the part of antes (Pl.XVI). On the three other facades, the columns are no farther from the cell than in the peripteral temples of Greece proper; but doubling the area of the portico before the pronaos suffices to impress on the edifice some traits of very peculiar character, that distinguish several Sicilian temples. It appears that sometimes in Sicily in deciding on the plan of the temple, men have had the idea that Vitruvius attributes to the architect, that he regards as the inventor of the pseudoAdipteral arrangement. It seems to have been desired to give the edifice a twofold purpose; the naos remained the house of the god, what it is everywhere; but the portico was enlarged to become a spacious promenade where

a multitude could be under shelter and circulate at ease. This was pleasant and convenient; but the edifice then certainly lost something of its severe elegance. The architects of Athens, Olympia and Delphi, did not approve of the innovation; it was only employed in Asia Minor in the different Ionic style, and by an art caring more for effect and richness than for pure beauty.

The most important of the temples at Agrigente, the temple of Zeus Olympios, varies yet more from the classical type (Pl. XVIII). For the architect who questions those grand r ruins, and who seeks to deduce therefrom the principal lines, all is a matter of surprise. What is striking at first are the enormous dimensions. Built of cut stone, the columns are sufficiently large for a man to enter and stand within the hollow of one of the flutes; yet what is still more astonishing is the strangeness of its arrangements. The temple is pseudoperipteral in the proper sense of the word; but w what we have not seen at Selinonte, the columns on the two principal facades are seven in number, and these supports, like those also of the lateral porticos, cylindrical externally and rectangular internally, are engaged in a wall that extends around the promenade. This wall fills the intercolumniations. It appears that only two of these remained open at the eastern end to give access both to the sanctuary and to the wide gallery that surrounded it on all sides. The arrangement of the cella was no less peculiar. The interior was divided in three aisles of nearly equal width by massive pierr joined together by a thick partition of stone. Above these piers, instead of the upper order, , that supports t the ceiling in the great temples, seem to have been statues of atlantes;[1] from the remains of these figures scattered over the ground among the ruins, the edifice must have received the name of the temple of Giants, by which it is known in the country.

Note 1.p.403. Nothing remains of the arrangement of the upper parts of the building; then by hypothesis is assigned to the atlantes the place attributed to them here; but this conjecture is still that most probable of all ..at have been made on this subject.

Without leaving Sicily, we could much extend this list;

the constructors of western Greece seem to have undertaken the task not to copy servilely the models offered them by the most celebrated edifices of the mother country. Have the attempts that they made to attain originality always been crowned by complete success? In these essays at partial invention, is there not sometimes betrayed an ambition, that deceives itself in the effect of the methods proposed? Is there not something called provincialism in literature? We can only propose the question here without solving it. It suffices us to have given by the examples cited above an idea of the independence with which in those distant quarters of the Grecian world, the architect has treated the theme, whose fundamental elements were furnished to him by his predecessors, by those artists who created the type of the Doric temple, much before those colonies were founded.

In this Chapter we have already had occasion to refer to the plates without text, where are presented the results of what we term the analytical study of the Doric temple. (IV-VII). Those plates form a series that will be continued in succeeding volumes, and which will permit one to follow the development od Greek architecture in its two principal modes. We shall give here very briefly some necessary indications; they will give the reason for the order in which those representations succeed each other; each of them will be definite; one will know the subject and the meaning, and can appreciate their interest.

Explanation of Plates IV to VI.

IV. The plate represents a birdseye perspective of the Heraion after the general drawings of Dörpfeld. (Olympia. Baudenkmäler. Vol. I). The edifice is cut at about the height reached at the time of the excavations by the existing parts of the work. There are shown the peculiarities that characterize the substructure of the temple and the construction of the walls of the cella. The columns are figured with the differences in diameters that an accurate measurement of the temple allows to be given. The Heraion is the most ancient Greek temple that we know; now as proved by the view in question, it already presents the three essential traits that characterize the Doric temple, such as it appears in the edifices of the 5 th century in its noblest

and most finished form. Those traits are:-- 1, the peripteral arrangement; 2, the coexistence of two pronaoses, in front and in rear; 3, the presence of an internal colonnade.

V. Birdseye perspective of the temple of Poseidon at Paestum according to the measurements of Labrouste. The edifice is cut for the cella above the frieze and for the sides in the course above the cornice. For the rear facade, the view gives the tympanum and the copings of the pediment. As they still exist in the different courses, there are indicated everywhere the recesses, that served for inserting the timbers of the carpentry. What especially results from this view is the independence of the two entireties that form the portico and the cella.

VI. Restoration in birdseye perspective of the carpentry of the temple reconstructed according to the gains indicated in Plate V. Fig. 1, a general arrangement and construction of the portico surrounding the temple. Fig. 2, the ceiling of pronaos and cella. Carpentry of pronaos . Carpentry of the portico.

VII. Figs. 1 and 2. Roofing of painted terra cotta. I. tiles and cresting of the treasury of Gela, perspective according to the geometrical drawings of Dörpfeld. (Olympia. Baudenkmäler. Vol. I, pl. 41). 2. Tiles, gutter and upper corona of temple C at Selinonte in perspective according to the geometrical drawings of Dörpfeld. (Ueber die Verwendung von Terrakotten am Geison und Dach griechischer Bauwerke.III)

Fig. 3. Restoration of the wooden coffers of the portico of the temple of Paestum.

Fig. 4. Construction and details of the same coffers.

Fig. 5. Marble coffers of temple of Theseus.

Fig. 6. Construction and details of the same coffers.

Fig. 7. Coffers of the lateral porticos of the temple of Bassae according to Blouet. (Expedition du Moree, Pls.15,16).

A. Covering and central acroteria of the temple of Egina, rear view according to Durm. (Handbuch, p. 153).

B. Same acroteria, front view.

C. Angle acroteria of the temple of Egina according to Durm. (Handbuch, p. 155).

D. Angle of temple C at Selinonte, perspective view according to the geometrical drawings of Hittorf. (Architecture

antique de la Sicile, pls. 22-26).

E. Temple of Egina. Perspective section of the pediment, showing that the figures are detached at the back.

5. The Treasuries.

In the principal religious centres of Greece and around the great temples, that of Zeus at Olympia, those of Apollo at Decphi and at Delos, one finds arranged in groups on a terrace or along the sacred way or the route traveled by t the processions to reach the thresholds of those illustrious sanctuaries, are small edifices in which by their form and by the inscriptions collected there, also by the position occupied on the ground, are recognized what Pausanias calls the treasuries. (Plate XX).[1] There the Greek cities deposited behind grilles and gates, that could be opened only by the aid of the guardians appointed to that office, those votive offerings which could not be exposed in the open air without injury; there were piled the statues, reliefs, steles with their dedications, coffers inlaid with ivory and precious metals, vases of gold and silver. This name of treasury in those sacred places was that applied preferably to buildings of this sort, which it suited in all points. Polemon, a traveler more ancient and more learned than Pausanias, employed the word temple[2] for these edifices, in w what he wrote on Olympia. Indeed, by their purpose as by their appearance, the treasuries were likewise true temples in their way.

Note 1.p.407. The figures on these paltes are all borrowed from the paltes of Vol. I of the Olympia (Baudenkmäler); but they are presented differently. 1, Terrace of the treasuries. (1, of Sicyon; 2, 3, unknown cities; 4, Syracuse; 5, Epidauros; 6, Byzantium; 7, Sybaris; 8, Cyrene; 9, Metaponte; 10, Selinonte, 11, Megara; 12, Gela; XIII, the Heraion; XVI, t the Exedra; XV, the Metroon).-- 2, perspective of treasury of Sicyon; 3, plan of treasury of Gela; 4, plan of treasury of Megara; 5, plan of treasury of Sicyon; 6, little treasury near that of Sicyon; 7, capital of ante of treasury of Megara, perspective; 8, engaged column of treasury of Gela).

Note 2.p.407. Fragmen. Hist. Graec. of C. Muller. Vol. III. p. 108:- Polemonis fragmenta, no. 20. Polemon mentions the naos of Metaponte and the naos of Byzantium, as well as the

offerings contained therein. Then one cannot doubt that there were two treasuries there.

Indeed the treasuries were born from the same sentiment as the celebrated temples around which they successively arose like so many annexes. Doubtless the treasories were not like the temple itself the proper house of the god; yet the god was present there in the sense that he was the owner of all valuable objects contained in that chapel; he had there his stores and his equipment. In this way the treasury participated in the religious character of the temple; it was like it, the monument of the piety of an entire people. The resemblance does not stop there. On both sides the arrangements are similar in their main lines. Certain treasuries are only composed of a simple square room (Pl. XX,6); but where the edifice has found its entire development, it consists of two rooms like the temple, a rectangular chamber, the naos, and an open vestibule, the pronaos (Pl. XX, 4, 5). The difference is in the very reduced dimensions of the treasury; so that the column does not play here such an important part, as that attributed to it in the temple. The cella of the treasury is very narrow; there is no need of columns placed in the interior of the room to support its ceiling. The vestibule is in the same proportion; it suffices there for two columns set between the ends of the walls, that are decorated by antes of very careful execution (Pl. XX, 7). Finally, there is no place to surround these narrow cellas by an external arcade, a docoration that would not have been in accord with the smallness of the buildings. Besides, to enlarge the structure thus, space was lacking; it was very sparingly allotted in the sacred enclosure, that was even encumbered by being filled by secondary temples, porticos, altars and statues. Each city of some importance wished to have its chapel; but it must be contented with a very limited area. The Treasuries were crowded against each other, almost to touch; they left only narrow passages between them at the sides. Likewise even where there was space to place a portico in these passages, it would not have been visible. One could find a free space to erect columns only on the facade before the vestibule; again, where are found assured traces of a prostyle arrangement, it is shown that

thise was added later[1] That is certainly the case for the treasury of Gela at Olympia, as demonstrated by the comparative study of the fragments of the cella and of those of the portico (Pl. XX, 3). There the portico is later by about a century than the body of the edifice; the masonry differs in the two parts. Perhaps what gave the idea of that addition was the square form presented by the cella. In adopting that form, they ensured a more spacious area for placing t the offerings; but even if the lateral walls were extended, one would not have thus obtained an arrangement as familiar and consequently as pleasing to the eye as that of the megaron; the appearance remained awkward and cold. They desired to correct this defect by erecting before this chamber a c colonnade, that was connected to the principal building by two columns attached to the ends of the walls of the naos. (Pl. XX, 8).[1]

Note 1.p.408. In the restored plan of the terrace of the treasuries given by M. Laloux, several of the treasuries present the prostyle arrangement. (Laloux and Monceaux. Restauration d'Olympia. 1889. p. 122, 123); but these restorations do not seem to be authorized by drawings made at the place. (Olympia. Tafelband I, Pls. 31, 32). Only at the treasury of Gela, the supports of this portico have left their impressions on the stylobate.

Note 1.p.411. Other treasuries, for example that of Metaponte, approach the square form.

Everywhere else the type, to which adhered the architects of the treasuries of Olympia, is that which Vitruvius calls the ante temple (Pl. XVI). The temple and the treasury came from the same architectural type, that of the megaron, a t type that the treasury could reproduce in its most elementary form, according to its subordinate function and small w width; but the temple existed with its essential characteristics long before the time when the first treasuries were built; the two regarded as most ancient, those of Sybaris and of Cyrene, appear to date at the middle of the 6 th century. By considering only the plan of the treasury, one would be tempted to find for it an appearance more archaic t than that of the temple; but that appearance vanishes, when one measures and restores it, and attempts to represent it

in elevation, as it was at Olympia and at Delphi in the most careful examples. One then sees it distinguished from the contemporary temples only by its very reduced dimensions, and by the simplicity of its general arrangement; but it r receives the same decoration, one as rich and composed of the same elements. Painting applied on the stucco colores the coffers of the ceiling and the different members of t the entablature, when the stone is not concealed beneath coverings of polychrome terra cotta, as on the treasury of Gela. The Doric frieze extends above the architrave on the facade; even sometimes as on the treasury of Sicyon, the r row of triglyphs continues under the cornice entirely around the edifice (Pl. XX, 2).[2] Like the temple, the treasury has a pediment. In the tympanum of one of these pediments, that of the trasury of Megara, the sculptor has grouped figures that arouse the idea of the power and triumphs of the god revered at Olympia; they represent the victory that Zeus obtained over the Giants, powers of disorder and of evil.

Note 2.p.411. Olympia. Tafelband I, pl. 28. View of the larger side.

We have borrowed from the ruins of Olympia all the examples, that have served us in giving an idea of this normal type; this is because the treasuries of Olympia are the only ones yet accurately described and illustrated in their entirety and details. At Delos between the temple of Apollo a and the portico of the horns, there have been measured the traces of six little edifices that appear to have had the same purpose. In general they took the form of the temple with antes; but we know them only by a general plan on which the arrangements are indicated at a very small scale.[1] As for Delphi, we know from Pausanias that the treasuries of the principal Grecian cities there bordered the sacred way that ascended to the temple of Apollo, and to judge from the treasury of the Athenians and that of the Cnidians, which recent excavations have so fortunately uncovered, these chapels were more sumptuously ornamented at Delphi than at Olympia, the sculptor lent his aid to the architect more largely there; but if the reliefs that carved have already commenced to attract the attention of archaeologists, there have yet been published neither plans nor elevations of th-

those buildings. According to the brief reports of M. Homolle these on the whole present the same characteristics as those accompanying the other great sanctuaries of Greece. The discoveries that France has made at Delphi, when we are permitted to use the work so impatiently expected, will not compel us to change anything in the disposition of the treasuries that we have given.

Note 1.p.412. Holclle. Les travaux de l'Ecole francaise d'Athenes dans l'ile de Delos. Pl. I (In Coccellion des C conference de l'Exposition internale de 1889. 1890).

6. Foundations and Stylobate.

Foundations are required for the temple; if it had not been solidly seated in the ground, the equilibrium of the structure vould have been at the mercy of the least settlement; the harmony obtained by subtle combinations and by careful execution would soon have been destroyed. How did the Greeks undertake to guard against that danger? Is the care for perfection that one admires in many of their works marked as strongly in the subterranean parts as in the visible portions of their edifices? Data are wanting to reply to that question; in the course of the excavations that have relieved more than one temple from its ruins, men have had occasion to lay bare its foundations; they have been able to study them.[2]

Note 2.p.412. Most of the facts given by us are borrowed from Durm (Die Baukunst der Griechen, 2 nd edition, 1895, p. 66-71). In the Chapter of that excellent manual entitled Fundamente will be found more details and Figs. than are c comprised in the plan of our book. We have given here only the essentials.

Where as in Sicily, the temples are built of a very coarse tufa, the same stone was utilized for the body of the structure and the foundations. On the contrary, when the temple was of marble, they were contented with a more common material for the latter. Thus at the Parthenon the stone for t the courses buried in the earth was not taken from Pentelicos; it was brought from the quarries of the Piraeus, nearer and more easily quarried; it is a very compact limestone. Nothing more natural; all that one has the right to demand from the material used for that purpose, is that it resists

well the pressures supported and the dampness of the ground. This same character of economy is again found in the arrangements that were adopted for the lower construction of edifices; the architect has contented himself with the strictly necessary. There are foundations only beneath the structure; the voids in the monument correspond to voids in the foundations. A first wall bears the stylobate; other subterranean walls correspond to the walls of the cella and those that form the pronaos and opisthodome.(Fig.213, Plate IV).

These same walls are far from presenting everywhere the kind of masonry, that seems able to give the most perfect solidity. There are some in which cut stone appears only in the form of piers between which the spaces are filled by r rubble set in a mortar of mud. Elsewhere those voids are o only filled by rubbish and stone spalls, cast in at random. Such procedures betray a certain haste; if they do not seem in general to have compromised the stability of the temples, it is because the constructor has found there almost always the living rock at a very slight depth; the consistence of this rock furnished the best of all bases for its foundations. Unfortunately it did not everywhere present a horizontal surface; its crest could form a broken line or incline rapidly in places. They then saw themselves required to follow it in all its variations, which led to giving the substructure very unequal heights in the parts of the structure. This is what we shall notably find, when we study the Parthenon. We shall see to what depth it was necessary to descend on the western front end and at the southwest angle of the temple to reach the rock, on which they desired to place t the foundations of the powerful edifice.

One cannot cite another example of such a considerable w work; but still there are differences that result from the form and composition of the ground. The front part of the Heraion of Olympia has for ground the bed of hard and compact sand; thus it has no foundations there, so to speak; in the pronaos these are reduced to one sunken footing course beneath the last visible course. On the contrary toward the west, the temple is placed on a bed of gravel and pebbles brought by the torrent. From the point where that deposit begins, the foundation assumes importance; beneath the

stylobate and the wall of the cella it has a depth of 8.5 ft. and a width of 12.7 ft. (Plate IV). At Delphi, it was found with surprise, that the temple of Apollo was placed on a series of low chambers and corridors, that formed a sort of subterranean story beneath the stylobate. Although the monument belongs in a distant age, all necessary precautions were taken; it also seems singular, that in certain edifices of more recent date such as treasuries, the foundations were executed with visible negligence. There are some in which they are only made of great pebbles cast in disorder beneath cut stones.[1] Those chapels with their short columns and very thin walls were not heavy to support; besides they were all grouped on the same terrace. That rested at the rear against the mass of the hill, and in front strong retaining walls enclosed its entire length. This was there a common base for that series of buildings, which ensured their duration.

Note 1.p.414. Durm, Fig. 49).

If where the temples have been erected on the rock, the explorer has usually found every facility to inspect the f foundations, this usually becomes very difficult, when he attacks edifices, that were built on the low and wet plain. If one desires to go very deep, water invades his trenches. That occurred in 187_ to Wood in his excavations at Ephesus. It would have been very interesting to be able to closely examine the substructure of the celebrated temple of Artemis. One would like to know how the Greek architect modified his procedures to adapt them to conditions so different from those ordinarily employed in his work. As Pliny assures us, is it true that the reason for the choice of that site was the idea, that the edifice established on that marshy ground would thereby be better protected against earthquakes? We are ignorant of this; but there was preserved the memory of works executed for the purpose of creating an artificial bed in that muddy soil, on which to place the foundations of t the temple. What served to compose that bed, it is related,[1] was a combenation of pulverized charcoal and locks of wool. The assertion may seem strange; yet it does not seem entirely inaccurate. At the very bottom of wells sunk against the foot of the wall of the cella, Wood at least found charcoal,

if not wool; that formed at those points a layer of about 2.76 ins., which was comprised between two slightly thicker layers of a sort of cement or mortar. As for the foundations properly so called placed on that triple bed, they were only made of stones of small dimensions, where they were e examined.

Note 2.p.414. Wood. Discoveries at Ephesus, including the site and remains of the great Temple of Diana. p.258-259.

Note 1.p.415. Pliny. N. H. XXXVI. 21.

We could multiply these remarks; they would all leave the same impression. The Greek constructor has not been inferior to himself in that part of his task; but he did not devote investigation and luxury to it. Perhaps except the Parthenon, where all parts of the work and even the least details manifest the high ambition, that presided over the noble enterprise, he was satisfied by the strictly necessary.

With the stylobate, which is the visible base of the edifice as the foundation is its concealed support, the execution of the masonry becomes more constantly regular. From the time that the building commences to leave the ground, the architect imposes on the workmen methods in accord with the character of the monument, that the city consecrates to the god, beneath whose protection it is placed by the erection of the temple.

Everywhere a series of ample steps connects to the ground the top of the stylobate, the platform on which rests the feet of the columns; but those steps do not have the same number everywhere. In some temples of Sicily there are five and even six; the last figure is reached in the temple of Zeus at Agrigente. Temples C and R at Selinonte have four. (Plate XXI, 3).[2] One counts only two on the temple of Hera at Olympia (Plate IV), and on the temple of Theseus at Athens. There are three on the Parthenon and on most temples of the 5 th and 4 th centuries (Plate XXI, 1 to 10). With three steps is obtained the proportion between those continuous substructures and the rest of the edifices, that best satisfies the eye of the spectator; but these variations only have a secondary importance. The principle always was the same, the architect always sought the same effect, when he inserted the stylobate between the ground and the

living works of the temple.

Note 2.p.415. Plate XXI, 1. After Labrouste, Les Temples de Paestum, pl.III. -- 2, after Blouet, Expedition de Moree, pl. 73. -- After Antiquities inedites be l'Attique, Chap. Vi, pl. 30. -- 4, after Ant. ined. chap. IV, pl. 4.-- 5, after Hittorf, Architecture ant. de la Sicile, pls. 22, 23. 6, Durm, Fig. 55. -- 7, Durm, Fig.55. -- 8, after Hittorf, Arch. ant. pls. 36, 37. -- After Garnier, Temp. de Jup. panhell, Plas. 2, 8.-- After Dörpfeld, Olympia. Baud.I,pl.8.

On some edifices these steps often have unequal heights. Thus on one of the temples of Selinonte, the steps measured from the ground have successive heights of 15.36, 17.72, 23.23 and 19.29 ins. Where there are only two or three, they have the same heights, that according to the importance of the monument vary from 15.75 to 23.62 ins. Most frequently they present a series of plane surfaces cut at right angles. Elsewhere and particularly in several monuments of Italy and Sicily the steps present a less simple arrangement. At Paestum and Nemea, behind each tread parallel to the ground is noted a recess sunk in the riser (Pl. XXI, 1, 2). Perhaps it was desired to mark better the separation of the steps by this band of shadow. Elsewhere the tread is slightly hollowed and stops at a little border formed by the vertical riser (Pl. XXI, 4). Again elsewhere there is a swell at about the third of the riser (Pl. XXI, 3). On other stylobates lower recesses are not continuous; they stop at certain distances, so that from top to bottom, the vertical joints may be made on a plane surface (Pl. XXI, 5). Those examples were not followed by the Attic masters. At Egina, the temple of Theseus, and at the Parthenon, the steps are plain (Pl. XXI,

Note 1.p.416. Durm, Baukunst. Fig. 55.

Note 2.p.416. In reality, the faces that appear horizontal are not actually so; they present a very slight enclination intended to facilitate the flow of water.

Whatever the profile, these steps were too high to afford convenient access to the platform of the stylobate. To reach it in that manner would be to execute a regular scaling, as I have frequently proved at the Parthenon. It is necessary for one to be able to enter or leave the temple without imposing on himself an effort, that could not fail to be pain-

painful. This result was obtained by various means that can be reduced to three principal systems. Here before the principal facade the steps are recessed, so that there are two risers in height to each step (Pl. XXI, 8). There instead of stairs extending the entire width of the facade, one finds a sort of flight of steps attached to the front edge of the stylobate for a part of its length (Pl. XXI, 1-5). This arrangement comprises certain variants not equally happy; thus on several temples, the stairs only corresdond to the middle intercolumniation, which did not fail to give it a somewhat mean appearance. Sometimes the tread is cut in t the vertical riser of the step (XXI, 7); sometimes it appears attached as an added piece against that face (Pl. XXI, 6). Finally, there is a last type, presented by the temple of Egina and that of Zeus at Olympia among others (Pl. XXI, 9, 10); the stairs are there replaced by a continuous ramp with a gentle slope; access to the sanctuary thus becomes easier than by a stairs. In the temple of Zeus the ramp is flanked by side projections; thus in a certain measure it is accessible not only by the edge of its slope, but also at its two sides. At the Heraion the stairs are found at one side, being located at the southeast angle (Pl. XII), an arrangement that one believes can be explained by the place occupied by the altar of Hera, outside and south of the temple.

As a general rule, the columns and the walls of the temple rest directly on the stylobate. There is only one exception to mention, that furnished by the temple of Zeus at Agrigente. There alone those steps that give an unusual height to the substructure, and there is still a moulded plinth a sort of supplementary stylobate, that extends at the base of the wall on which are engaged the half columns of the exterior, those colossal columns, which with their capitals were nearly 62.3 ft. high.

We shall not speak here of the artifice by which the Greek architect has given a slight convexity to lines, which produce to the eye the effect of straight lines, like those of the stylobate. These curves have been mentioned and studied only on edifices of the 5 th century; they are particularly on the marble temples of Athens. We shall have to seek the

reason for it when we treat the art of the age of Pericles.

7. The column.

The column (chion in the current dialect and more particularly stylos in the technical dialect) is a pillar, a support with a horizontal section limited by a circumference. In the edifices of the Mycenaean age, it was of wood. We h have stated for what reasons about the beginning of the historical period, the architect adopted the mode of giving to the stone in his structures a part more important, than it previously had; we have shown how in the column must first be entirely made this substitution of one for the other material. The first columns of the new type were cut in a single block; thus one had as a form the equivalent of the trunk of a tree. These monolithic columns are still found in the old temple at Corinth (Pls. XXII, XXIII) and in the so called temple of Artemis at Syracuse (Pl. XIII). However as t the dimensions of the edifice increased, and with them the height of the supports, it became more difficult to adhere to monolithism; above a certain weight, the transportation and hoisting of these members would have required a too painful effort. It seems that sometimes that difficulty was perceived in the course of the construction itself, to undertake in the full work to solve it. In temple C of Selinonte and in that of Egina, some columns are monolithic; the more numerous others are made of several blocks. Then men came to compose the shaft of several blocks superposed on each other (Fig. 214). Each of those blocks was cut in view of the place, that it must occupy in the whole; thus the architect came to give the shaft the desired curvature and t that slight inclination toward the interior of the edifice, whose reason and effect we shall have to explain. Those blocks were fitted with sufficient precision, for the form of the column to continue from bottom to top without breaks in the line of its contour. This unity of the column and drums was obtained by procedures, that will also be perfected in Attica in the marble temples of the 5 th century, but which in the most ancient temples already witness the care, that the Greeks devoted to the execution of their works. The drums are especially kept in place by their own weight and by the clost contact, that they succeeded in producing between

the bedse In each middle portion, the middle part was only dressed with the point and formed a slight depression, around which extended a projecting ring; the contact only occurred between the drums on the surfaces of those rings. M Menendeavored to make those surfaces as smooth as possible. Finally, to prevent all chance of displacement, by creating a mechanical connection between the drums, they were joined together by dowels of wood or of metal.

Monolithic or composed of several drums, the Greek column is always fluted; when it is found to be smooth, as at Segeste (Fig. 180) and in some other edifices, this is because the edifice was unfinished; in that case one nearly always finds the flutes started at the top and the bottom of the shaft. The workyard was abandoned, before the work was completed after being laid out. If in the temple of Demeter at Paestum, the first of the shafts of the internal colonnade is without flutes on a part of its circumference (Fig. 215), that is probably with the intention for that surface to serve for inscriptions.

We do not have to define here the fluting; we have already met with it in Egypt, Assyria, Cappadocia, Persia and Mycenae.[1] It has seemed to us very probably that it was first used on wood, wrought with the gouge. However that may be, since that moulding has been employed everywhere in nearly the s same fashion, it must render a service whose importance is incontestable. This is because at the first glance the spirit of the artist seized on it with one of those rapid intuitions, of which he has the secret. With the channels that groove it, the fluted column offers to the eye a surface w with a wavy horizontal section, whose development is entirely different from what it would be for the contour of an entirely smooth shaft of the same diameter, and that makes it seem stronger than it really is. The play of light produced on its surface and the dark lines drawn there have more vigor, the more vivid the light that strikes it, placing accents thereon, which give it an appearance more frank in consistency and firmness; but while enlarging the column, the fluting does not make it heavier. Entirely the contrary, t the glance of the spectator is attracted to those vertical lines, which all tend toward the capital; it follows them

and ascends with them. This artifice renders more apparent the ascensional movement of the support; by this it better accents its function, and marks more clearly at first sight its place in the entirety; thus it very effectively contributes to the general expression of the edifice.

Note 1.p.424. Histoire de l'Art. Vol. I, p.549-550; II, p. 270, Fig. 110; III, p. 461, Fig. 337; IV, p. 695, Figs. 314, 321; V, p.457-488, Figs. 292, 311, 312, etc.; VI, p.525, F Figs. 201, 204, 205.

The concavity of the flutes is formed by an arc of a circle in the most ancient temples of Selinonte and in that of Metaponte (Pl. XXIV, 8, 10; Fig. 216)[2] -- elsewhere the curve is elliptical (Plate XXIV, 9; Fig. 217). This arrangement has the effect of rendering the edges finer and more nervous, as it were, and tends to prevail as the art becomes refined. (fig. 218). In the Doric order they are tangent to each other and are only separated by sharp edges. That rule is but rarely departed from, as for example at Selinonte, where in the pronaos of temple S, there are narrow flat bands (fillets) between the flutes (Fig. 219). In one of the treasuries of Olympia are found beads, rounded or otherwise arranged; they are on alternate edges (Pl. XXIV, 11). The number of flutes is always even; it varies from 16 to 24.[1] Twenty is that most frequently found; 24 is only a very rare exception. It further does not seem that there is to be sought a ratio between the number and the age of the temple. At the temple of Poseidon at Paestum, the column has 24 flutes, a and this monument is less ancient than two temples of Selinonte and the temple of Corinth, where there are 20 flutes; but on the other hand are counts of but 16 at the temple of Sunion, which dates only from the middle of the 5 th century.

Note 2.p.424. Pl. XXIV, 1 to 12. Capitals of the old Doric temple of Tiryns. Schliemann. Tirynthe. p. 275.-- 2. Temple of Metaponte. Capital; De Luynes and Debacq. 13,14. Annulets of the capital are profiled after De Luynes and after Sante Simone (Lacava, Topografia etc. Pl. X).-- 3, temple of Corinth, and 15, profile of the annulets after Dörpfeld (Athen. Mitt. 1886. Pl. 8. -- 4, capital of temple D at Selinonte. -- 16, 17, 18, profiles of annulets and of the gorge. After Hittorf. Archit. ant. etc. Pl. 32. -- 5. Capital of

temple S at Selinonte. 19, 20. Sections of the annulets. H Hittorf, Pl. 55. -- 6, capital of Temple C. 21, 22, Annulets of the echinus and the shaft. Hittorf. Pl. 24. -- 7, capital of temple of Poseidon at paestum. 23. Section of the annulets and of the echinus. Labrouste. Pl. 9. -- 8, plan of the flutes of the column of Temple C. Hittord. Pl. 24. -- 9, c column of temple of Poseidon at paestum. Plan of flutes. Labrouste. Pl. 10. --10, column of the naos of temple S. Plan of flutes. Hittorf. Pl. 55. -- 11, column of the treasury of Syracuse at Olympia. Plan of flutes. Olympia. Pl. 24.

Note 1.p.429. As exceptions to custom, 18 flutes are indicated in the pronaos of the temple of Assos, 28 on a column found among the foundations of the temple of Ephesus, and 32 on two shafts of Samos described by Ross (Reisen). One will note that excepting 18, all those numbers are multiples of 4. G. T. Clarke. A Doric shaft and base found at Assos. (Am. Jour. of Archaeology).

This diversity that we have mentioned in the composition of the column and in the number of the flutes, one again finds in even the form of the support. No column does not diminish from the base upwards or is not smaller beneath t the capital than at its base; but the profile of the shaft is always far from being always the same. The variations that it presents can be reduced to two clearly characterized types. Sometimes the column has what is termed an entasis, i.e., the outline presents in its height a curvature very perceptible to the eye. This line belongs to one of those open curves, such as the hyperbola or parabola, that are not easily distinguished from each other, considering the condition in which the monuments are today. It is said that the column characterized by this line has something of the appearance of a sack.[1] The comparison may appear forced, b but it emphasizes the very peculiar character of the form so created. This entasis is most marked in the basilica at Paestum. (Pl. XXV, 3); then come certain columns of the Heraion (Pl. XXV, 2), and the columns of the temple of Metaponte (Pl. XXV, 1).[2] This entasis is only exceptionally found elsewhere. In most temples the column seems to have no entasis. At first sight, it gives the impression of a simple frustum of a cone. Yet even then it is not a straight l

line that forms upward the contour of the shaft; it is a c curve of the kind mentioned, but one whose rise is so short as to almost escape calculation. There again is an entasis, but one scarcely indicated; the effect is only perceived by a certain effort of attention. Yet it is no less needed to animate the column in a way, and however massive it may be, to give it an air of elegance and of living elasticity. Whatever the profile of the column, the flutes on it are always intersected at a small distance from the capital by one or more grooves of slight depth, that extend around the shaft. These are called annulets or fillets. Sometimes the f fillets are only at the top of the shaft, where it joins t the capital (Pl. XXIV, 2). Most frequently one or several incisions are placed a little below and cut off there a sort of necking (Pl. XXIV, 3, 4, 5, 6, 7). With the habit of animating everything and of personifying everything in nature and art, the Greek mind was pleased to compare the column to the human body; it even went so far as to give it a certain sex, according as it belonged to a certain order. For itself, the capital was the head of the column, as indicated by the term that designates that part of the support in all languages. By virtue of the same analogies, men compared to the neck of man the space bounded by the upper annulets and the incisions. The Greeks called it Hypotrachelion (literally "what is below the neck," the neck being the upper annulet, the junction of the shaft and the echinus); we call it necking.

Note 1.p.430. Durm. Baukunst. p. 86.

Note 2.p.430. Pl. XXV; 1. Column of temple called Colonne Paladine at Metaponte. After De Luynes and Debacq. --2. One of the stone columns of the Heraion at Olympia on the southwest facade. After Dörpfeld. Olympia. Baudenkmäler. Pl. XXI. -- 3. Column of basilica at Paestum, after the measurements of Labrouste.

Note 1.p.433. Vitruvius employs the word hypotrachelium several times, but without defining it anywhere. But it results from those passages, that he applies it indeed to our necking.

At the necking terminate the finish of the flutes; they do not end everywhere in the same fashion. In several anci-

ancient temples, there is between the shaft and the echinus a hollow, sometimes very marked. The flutes there terminate by penetration beneath the echinus or lose themselves there by allowing their hollow to vanish insensibly; this is the case at Metaponte (Colonne Paladini), where the flutes die around the circumference (Fig. 330). Elsewhere, and this a arrangement will prevail in the classical age, the shaft d directly joins the echinus without this intermediary hollow, and then the flutes end frankly in an elliptical curve below the separate fillets (Pl. XXIV, 7, 15).

With the joint concealed in the sinking of the incision usually commenced the block in which was cut the capital in a single piece; but between that and the direct ascent of the shaft, art had arranged a transition. The passage f from one to the other is made in several ways, according to the epoch. We have mentioned the receding moulding inserted under the echinus in some old temples: at its top it recurves outward and projects on the echinus (Pl. XXVI, 10, 11, 14, 17). It is a species of scotia with its hollow filled by a row of leaves with carved projecting ends, that recurve downward. This hollow comprises a great diversity of arrangements and ornaments, of which we have attempted to give an idea by grouping the motives collected in Pl. XXVI.[1] Here is the capital of the stele of Xenares, that according to an inscription, appears to date from the first half of the 6 th century(Pl.XXVI, 16, 17). The bases of the leaves were indicated in two colors in the hollow of the gorge; o only their points are cut in the stone, are detached and r rounded like a little collar. In the capital from the treasury of Syracuse at Olympia are no reliefs (Pl. XXVI, 16). On the little temple at Paestum to which is attached the n name of Demeter, and in the great portico (basilica), the leaves are modeled in the tufa, and above them the chisel has added a supplementary decoration at the bottom of the echinus (Pl. XXVI, 4, 7, 12). Here is a plait (Pl. XXVI3), and there are[2] lotus flowers, palm leaves or rosettes (Pl. XXVI, 2, 5). Those leaves so placed in the necking of the shaft are a heritage of the past. Mycenaean art furnished the model to classical art; we found and mentioned them in the fragments of the treasury of Athens, where they entirely

enclose the cushion that forms the lower part of the capital.

Note 1.p.434. Pl. XXIV. 1. capital from the basilica of Paestum, seen from below. After Labrouste (les Temples de Paestum, Pl. 19) and Puchstein, Das Ionische Capitell, Figs. 40, 41. The ornaments are after Puchstein.-- 2, 3, 4, 5, 6. Vrious ornaments of capitals of the same edifice. Puchstein, Figs. 40, 41.-- 7, 8. Details of capitals of the same edifice. Puchstein, Figs. 40, 41. Durm, Fig. 68.-- 9, 10, 12. Capital of the temple of Demeter, elevation and details, after Durm, Fig. 68.-- 11. Section of echinus of a capital of the same edifice, after Labrouste, Pl. XIV.-- 13, 14, 15. Capital of the treasury of Syracuse, elevation and profile. Olympia, Pl. XXIV.-- 16, 17. Capital of funerary column at Çorcyra, elevation and profile. Puchstein, Fig. 39.

Note 2.p.434. M. Puchstein was the first to call attention to that curious ornamentation of the gorge of certain Doric columns. (Das Ionische Capitell. 1887. p. 48,50). It had already been noted and mentioned by Lagardette in his too neglected book (Les ruines de Paestum. Year 7). He measured and drew the details in his Pl. XI, F, G, H, I).

Note 3.p.434. Histoire de l'Art. Vol. VI. p. 727, Figs. 203, 204, 280, 281.

Did it appear to the architects, when their taste became refined, that such a decoration was not in harmony with the severe simplicity, that characterized the entirety of the Doric column? We do not know; but it is always the case in the marble temples at Athens, that one no longer finds anything resembling this complicated decoration of the gorge. That disappeared on the columns of those edifices, or to speak more accurately, it was no longer represented only by four or five annulets (armillae of Vitruvius), with a very slight projection and very close together; it is already thus in the temple of Poseidon at Paestum (Pl. XXIV,7). These annulets form the close lines of the second collar. At the same time that necklaces hung on the neck, were there not others in feminine ornamentation, that enclosed the neck just below the chin?

The capital comprises two members, the echinus of circular plan, and the abacus of square shape. It is always a serious difficulty for the architect to succeed in establishing

between the conical shaft and the rectangular architrave a junction, that satisfies the laws of statics and pleases the eye at the same time. This difficulty was felt by the Mycenaean architect, and he thought of the sole method that can guide the artist to triumph over it. To make the transition from one form to the other, he conceived the placing of a square slab on a pad or cushion of circular plan. His successor only had to lengthen that curve of the echinus and enlarge the abacus; those changes of profile sufficed to create a masterpiece. Never has art given a solution of this p problem simpler and more elegant in the entirety, than that represented by the Doric capital. The echinus at its lower part has the same diameter ar the top of the shaft; at its top, it is circumscribed by the four sides of the area of the abacus. The two surfaces join thus; there is no void except beneath the four corners of the abacus, the overhang.

In the most ancient monuments, the contour of the echinus corms a very projecting curve, a bulging and soft curve, t that ordinarily ends in a slight contraction at the junction with the abacus. It is thus on the capital of a Doric temple, some fragments of which have been found in the citadel of Tiryns, on the capitals of temple D of Selinonte a and of the temple of Metaponte (Pl. XXIV,1, 11, 4, 2). At Corinth the curve has already commenced to rise (Pl. XXIV,3). On the capital of the temple of Poseidon at Paestum this r rise is already more marked (Pl. XXIV,7). On the works of the best period, the echinus is an inverted frustum of a c cone; the curve is strengthened. It tends thus yet more in the capitals of the last centuries of the classical age; it then acquires an elegance not exempt from some dryness; it lacks amplitude. If one draws a tangent to that curve through a point taken at the middle of the curve, the tangent makes an angle with the horizontal prolongation of the plane of the abacus, that in the old capitals is about 30°degrees, 45° at the Parthenon and 50° to 55° on the latest capitals.

The capital is terminated by the abacus, a square slab, whose height sometimes exceeds and is sometimes a little l less than that of the echinus, from which it has no projection or a very small one. By its mediation is arranged the transition from the ascending forms of the support to the

horizontal forms of the entablature . Thus the echinus and the abacus have distinct functions with different profiles; but no less the two form a single architectural member; they are always cut in the same block. It is otherwise only on the temple of Zeus at Agrigente. There the colossal dimensions of that edofice and the fact that the colunms are engaged there require other arraggements; the echinus and the abacus are separate pieces there, whose tails are set in t the masonry of the walls. Eveeywhere else there is a dowel, most frequently a metal bar, that connects the capital to the last drum of the shaft.(Pl. XXIV,1).

Another general rule with no exceptions is, that in the Doric order, neither the echinus nor the abacus ever receives any sculptured ornamentation. No ornaments other than those of the gorge, and in types in which Greek art has said its last word, these are also reduced to simple fillets. It does not even appear that there the brush attempted to replace the absence of the chisel. All the beauty of the capital was in the happy proportion of its parts and in the nobility of its lines.

It is not entirely the same for the capitals, that instead of entering into the composition of an edifice, either surmount funerary steles or columns intended to support a prize or a votive figure. Even then by the general character of their form, they recall the Doric capital and are attached to it more than to any other type, and present very curious peculiarities; they constitute another series. A certain n number of thesemonuments were found in the course of the excavations on the Acropolis, in the rubbish produced by t the destruction made by the Persians in the inteeior of the citadel; thus they belong almost entirely to the 6 th or f the first years of the 5 th centuries. The peculiarities of these capitals are explained by the special nature of the function that they had to fulfil. If some of them reproduce the type of the capitals of the columns of temples, others vary from it very sensibly. They are not required to establish a connection between the shaft and the entablature; t then one can dispense with giving the abacus a square form. In most of these pieces, that is a circular slab surmounting an echinus in the form of a basket (Pl. XXVI,16). Nearly al-

always the echinss and sometimes also the abacus have received an elegant painted decoration, whose motives are leaves or palmatiums; one also finds there lozenges or scales and often the fret. The ornamentation varies; it is everywhere brilliant and gay.[1] When in the time of Solon, Pisistratus or Clisthenes, some Eupatrid consecrated to the patron goddess of the city a tripod on which ivory and silver mingled their whiteness with the gleam of gold, when he dedicated to her a statue of a woman, on which ran for the entire length of the drapeey a border, whose design was detached in rose or blue on the matted tone of the marble, he desired that the pedestal of the tripod or the image should be in harmony with the richness of the offering.

Note 1.p.439. Durm. Handbuch. Fig. 70.

The painters of vases have more than once placed buildings temples, porticos or fountains in their pictures, which serve to fill the ground and better define the meaning of the scenes, that they represent. However summary may be the indication of the forms in these sketches, it is still sometimes sufficiently precise for one to recognize there types, other examples of which have been collected in the remains of edifices. On the beautiful cratera of the 6 th century that archaeologists call the Francois vase, from the name of the discoverer, there is the image of a structure in the Doric style erected over a fountain (Fig. 221). The capital of the column there has the appearance of the hollow dish. As for the pear shaped capitals, that the same painter has given to the columns of what must be a temple in another p painting of that vase (Fig. 222), perhaps it is unnecessary to see in the form attributed to them there more than a sort of conventional abbreviation; yet at least on the votive c columns are found some capitals, that present this profile; there are some on Cyprus and at Athens.[2] One does not have fanciful architecture in those paintings, of the sort that in the frescos of Pompeii amuse the eye by their improbable proportions and their impossible caprices. One thus has a basis for also taking into account another trait of these sketches. In both the shaft has a very simple base, that seems to be only a disk similar to that on which was set the column of the palace of Tiryns and of Mycenae. That

wooden column characterized by its slenderness, we believe is recognized in the very thin column of one of the two pieces (Fig. 221). In a pavilion of light construction would have been established the fountain where women went to fill their vases; but the shaft of the post in the other edifice does not have such slender proportions (Fig. 222); it seems that a stone column there served as a model for the painter. When stone was substituted for wood in the shaft, the base which the latter could not do without became useless; yet perhaps it was not at once decided to suppress it. These designs thus attest the temporary existence of a stone Doric column provided with a base, a transition type of which no certain example is preserved in the edifices. One indeed scarcely knows what to think of a singular column, whose lower part was found in the pronaos of the temple of Demeter at Paestum. (Fig. 223). Labrouste restored it with an Ionic capital;[1] but if it has a base, that base does not present the canonical traits of the Ionic base, and further the fluting of what remains of the shaft shows no fillets; it is the Doric fluting. If one can hesitate concerning the true character of this enigmatical type, he would not feel the same embarrassment in regard to the lower part of a column with Doric flutes, that had the function of a stele in the cemetery of Assos. It was set with lead in a hole made at the centre of a large disk cut in the same rock, that served to support the monument (Fig. 224).[1] This base, that was cut away to give space for a sarcophagus of later date, was 5.25 ft. in diameter and 1.12 ft. high. The diameter of the shaft is 1.34 ft. It was broken off at 2.13 ft. above the base. It is assumed that it was about 9.0 ft. high, and that it bore a statue, of the votive inscription engraved in two flutes, there unfortunately remains only the initial word and some letters of two other words. These flutes are 25 in number; that is a peculiarity of that other antique column seems to present.

Note 2,p.439. Histoire de l'Art. Vol. III, Fig. 117.

Note 1.p.440. Temples de Paestum. Pl. XIII. Long. section.

Note 1.p.441. J. T. Clarke. A Dorci shaf found at Assos. Am. Jour. of Archaeol. Vol. II. 1886. p. 267-285.

If we have emphasized the votive columns and those of the

architecture represented on the vases, this is because both aid the historian to form an idea of the primary variety of the forms; but it is particularly as an integral part of t the temple, that we have prepared to study the column in t the role that it plays as a support, and in what it adds in beauty by the nobility of its proportions and of its pose. To comprehend what use of it was made by the science and t taste of the Greek architect, it is then proper to consider it in the edifices where it is still standing, where before the wall of the cella the shafts were aligned, and rose proudly on the stylobate, holding suspended on their heads t the weight of the entablature.

One of the most singular arrangementr that have been noted where the ruins permit systematic observation, is that the axes are out of plumb in the edifices, whose execution is most careful, particularly in the 6 th and 5 th centuries. All the columns are slightly inclined toward the interior of the monument. This will be understood from the diagram, which represents the four planes passing through the axes of the columns of the hexastyle Doric temple, meeting at a very great height to form a solid (Pl. XXVII).[1] It is scarcely necessary to state, that to render the effect more distinct, the inclination of the shafts has been greatly exaggerated in the sketch, for the angle columns this is only about 1.58 ins. for the entire height of the shaft in the great temple of Paestum and at Egina, shown in the adjacent plate, where the dotted lines indicate the direction of the plumb lines on the columns (Fig. 2, 3, Pl. XXVII).

Note 1.p.442. Pl. XXVII. 1. Theoretical diagram. 2-6, columns of the temple of Egina, according to notes of Ch. Garnier. (Le temple de Jupiter Panhellnien. 4. Equal angular inclination of the two faces of the temple. 5. Inclination perpendicular to the wall of the cell and none in the vertical projection. 6. Inclination perpendicular to the lateral wall of the cella. In these Figs. the dotted lines indicate the direction of plumb lines. 7. The columns of the temple of Theseus according to pennethorne. The Geometry and Optics of ancient Architecture. 1878. Part IV.Pl. XV,2.

This inclination is produced in two ways, according to two systems that it is important to distinguish. Here at

first is the simplest, whose application has been verified on several monuments, and which corresponds to the diagram above; (Pl. XXVII, 1); we represent it according to the temple of Egina (Pl. XXVII, 2-6). The columns of the portico are all slightly inclined on the four sides of the edifice toward the wall of the cella. In consequence of that arrangement, the corner columns have a double inclination. It is to be noted, that if one considers the generatrices of the columns in the longitudinal and transverse sections of the temple, that those beside the nave are much more nearly vertical than those outside.

The other method is more complicated, and its use has so far been mentioned only by a single observer, Pennethorne, and in regard to a single edifice, the temple of Theseus. (Pl. XXVII, 7). There on both fronts, the columns incline toward the wall of the cella, and at the same time toward the longitudinal axis of the edifice; that inclination is the more marked, the farther the column is distant from that axis, from the middle intercolumniation. Along the longer sides of the parallelogram, the columns are arranged as in the preceding example; particularly on the outside is t the inclination pronounced; it is scarcely perceptible beneath the portico. Nearly everywhere, it is revealed only by a minute examination made with instruments of precision; y yet it is perceptible in the angle columns, at least by the trained eye of a professional man.

The reason for the existence of this artifice has been s sought in the laws of statics and in those of optics. Both have perhaps contributed to suggest the idea of such an arrangement. In case of an earthquake, the supports inclined toward the interior of the edifice must resist beeter than vertical supports a movement of translation, that would have thrown them to the exterior. On the other hand, the wall of the cella at the Parthenon has a slight batter; it thus appears to lean toward the interior in its upper part, while because of the diminution of the shaft, the line of the column is inclined in the opposite direction toward the outside. Thus in elevation there is a certain divergence between the two enclosures of the sanctuary, the wall and the supports of the external portico. It is proposed to lessen

this contrast by inclining the axes of the columns from the vertical; the deviation was but a few ins., and the column thus seemed to follow the movement of the wall, tending to become parallel with it.[1]

Note 1.p.448. This was suggested by Durm, who rejects the other explanations (Baukunst, p. 95). Some have thought to find in a passage of Cicero (In Verrem, II, 1, 133) an allusion to this inclination, that the architect sometimes imposed on the column as a system. It appears more probable that the orator only desired to recall, that it was not easy to give rigorously vertical axes to all columns.

To give an inclination more or less great to a column composed of several drums and comprised between two horizontal planes, those of the stylobate and of the architrave, it w was necessary to resort to certain artifices, whose theory we cannot explain here.[2] By a special cutting reserved to t the two lower and upper drums, the desired result was obtained. The beds of these drums were not horizontal, and consequently these drums did not have the same height outside and inside; but the joints of the drums comprised between the extreme drums were generally parallel to each other. Further it is particularly in the Doric temples of Athens and of Paestum (Pls. XXVIII, XXIX), that one finds these wise combinations and these refinements (Fig. 225);[3] they are vainly sought in most of the temples of Sicily. We shall have occasion to return to this subject in the course of these studies.

Note 1.p.446. See Durm, Baukunst, p. 95-97, Figs. 72, 73, 74).

Note 2.p.446. Durm, Baukunst, p. 100.

On many temples, the angle columns are a little larger t than the others. Vitruvius prescribes the enlargement of t the angle columns; he even fixes at 1/50 of the diameter t the normal amount of that increase, and here is the consideration by which he justifies that practice.[4] "If these are necessary," says he, "it is because these columns are surrounded by air, and thus they risk appearing to the spectator more slender than the others, that are seen against the wall. A doubt has been expressed concerning this subject. With t the form of the temple, with the shafts so near each other

as are those of the portico, one can scarcely have occasion to see the angle column detached alone against the sky to seem reduced thereby.[5] To find the point from which it presents itself under that aspect, it is necessary to search, and still the form of the olaction in the vicinity of other buildings does not always permit one to place himself there. We agree, but has one any other explanation to give of this arrangement? The architects certainly had their reasons for taking this method. These reasons must both have been explained in one of those writings, in which they analyzed their own works, and has one not a right to think, that here as in many other pages of his book, Vitruvius is merely the interpreter of the masters by whom were created the models t that he teaches men to imitate?

Note 4.p.448. Vitruvius, III, 3, 11.

Note 5.Durm, Baukunst, p. 101.

If in the monuments regarded as masterpieces of art, the columns are neither entirely vertical, equally inclined, n nor of equal sizes, and the distances separating their axes are not uniform. There again, when one takes measures in w which scrupulous accuracy is pushed as far as possible, one has surprises, particularly in relation to archaic edifices, The dimensions of those intervals are dissimilar, according to the place that they occupy in the portico. The angle intercolumniations are less than the others; sometimes even the various intercolumniations present distances, that constitute a gradation of distances from the angle to the centre of the arrangement; that will be verified by taking the widths of the intercolumniations in the adjacent Figs., that show the extreme liberty that the architect used in locating his columns (Figs. 226,to 230). One will note in the first example, that the intercolumniations all have different widths on the facade and on the sides of the pronaos; beyond the pronaos in the series of the portico, they become sensibly equal to each other. These intervals at the sides are narrower than the narrowest intercolumniations of the facade. (Fig. 226). Further, the distance between the angle column and the adjacent columns is the same on the facade and on the sides (Fig. 227). In another edifice, the intercolumniations of the sides are all wider than the middle and angle

intercolumniations of the facade. (Fig. 228). Here on the facade the middle intercolumniation is narrower than the middle intercolumniations (Fig. 229). There in the facade the mean intercolumniations are sensibly equal; those of the sides are a little wider (Fig. 230). Such is the arrangement, that from a certain time appears to be most generally employed; until about the end of the 5 th century, one usually gives greater width to the middle intercolumniation. The angle intercolumniations have always been and will always remain narrower. In placing the columns closer near the four corners of the edifice, did men desire to strengthen these angles, perhaps giving to construction the reality, or at least the appearance of a firmer site? Or indeed is it especially the arrangement of the entablature, that reacted on that of the supports? Is this to have more facility in placing his angle triglyphs, that the architect has thus brought certain columns closer together? It is of little importance in what measure each of these inducements contributed to cause this rule to be adopted; but it is certain that it has been applied everywhere. The reduction of those intervals is more constant and more perceptible to t the eye, than the enlargement of the angle columns.

If in the same temple the width of the intercolumniation varies with the place it occupies in the arrangement, that variation is confined within very narrow limits. On the contrary, one finds very marked differences, when he compares this width in one edifice to that in another, particularly when one compares monuments belonging to very different periods of the development of the art. The ratio of voids to solids is far from being the same in a temple of the 6 th, in a temple of the 5 th, or one of the 4 th centuries. To note this, the diversity of the facts have been reduced to fixed formulas. Thus Vitruvius distinguishes five systems of proportions, which he designates by terms, whose composition even indicates that they were borrowed from the technical language of Grecian architects (Pl. XXX);[1] the unit or module, as he says, that he employs to define these systems, is the lower diameter of the column, or the triglyph in the Doric order. Here is the list that he drew up.

Pycnostyle ratio; interval of 1 1/2 modules.

Systyle ratio, interval of 2 modules.
Eustyle ratio, interval of 2 1/4 modules.
Diastyle ratio, interval of 3 modules.
Aerostyle ratio, interval of more than 3 modules.
Note 1.p.453. Vitruvius, III, 3, 1-7)

As informed by the name itself borne by the third of these systems, that is the one that Vitruvius prefers[1] the eustyle according to him corresponds better than the other arrangements to the requirements of construction and of circulation; it likewise gives to the colonnade the appearance that most pleases the eye. Vitruvius adds a remark concerning t those:— he says that in the diastyle the free spans of the architrave are too long; the stone of which they are made is exposed to fracture. As for the aerostyle, according to him, one can use for the architrave neither limestone tufa nor even marble; wood alone with its elasticity can lend itself to cover such wide spaces.

Vitruvius seems to attribute to Hermogenes the invention of the theory that he proposes;[2] now he lived in the 4 th century, i.e., much after the time when were erected all t the good Doric temples of Greece. The elements of this theory must then have been derived especially from the study of Ionic edifices, the only ones built then, and consequently the only ones that interested then the architect. Thus as one proves when he enters the path of accurate measurements, the numbers 1 1/2, 2, 2 1/4 and 3 that Vitruvius indicates as the different normal expressions of this ratio, in no case agree with those furnished by the measurements made on the monuments themselves. That results from the following table, where the inscribed numbers represent the ratio found between the lower diameter and the interval between the column

Egeste, 1 1/5 to 1 1/6.
Selinonte, temple A, 1 1/4.
Corinth, old temple, 1 2/5.
Athens, Parthenon, 1 2/5.
Bassae, temple 1 1/3.
Egina, temple, 1 3/5.
Athens, temple of Theseus, 1 3/5.
Selinonte, temple C, 1 3/5.
Selinonte, temple D, 1 3/5.

Olympia, Heraion, 1 3/4.

Athens, Propyleion at middle, 2 3/5.

Çadacchio, temple, 2 3/5.

Note 1.p.451. We borrow this data from Durm,(Baukunst,p. 104). Also see Ch. Chipiez. Au system modulaire dans l'architecture grecque, p. 32, 33 and Pl. VIII (Revue arch. 1891. p. 1-14, 9 pls).

By themselves alone, these figures do not suffice further to give a just idea of the character of an arrangement. To define it, other elements must be taken into account, the actual dimeter of the columns, their form and their relative height. With the same intercolumniation, two colonnades might produce a very different impression, according as the shafts are short and squat or as slender as allowed by the proportions of the Doric order.

When one studies Greek architecture, and he knows its evolution from the 7 th to the 4 th centuries, by comparing edifices to which one is correct in assigning a date more or less approximate, he recognizes that this art has not ceased to modify its system of proportions, and that changes are always made in the same sense, and that they are all expressions of the same tendency. In the portico that surrounds the temple, we must indicate from this moment that the voids have not ceased to increase at the expense of the solids. At the same time that the columns become thinner and more slender, the intervals separating them are enlarged. This is proved when one measures these intervals between the feet of the shafts or at their tops between the capitals under the architrave. This last mode of measurement gives results that the eye seizes more quickly. "There is the place where the intervals are most strongly accented. The square abacus alternating with them contributes to that effect by forming a denticulation whose rhythm clearly strikes the view. This rhythm ismadevery apparent in the examples represented here ((Fig. 231). In the temple of Artemis at Syracuse (I), the width of the space is to that of the abacus nearly in the proportion of 1 : 5 1/2. This ratio successively increases in the temples of Poseidon at Paestum (II) and R at Selinonte. (III; Pl. XXXI). There is equality between the space and t the abacus in the temple of Zeus at Olympia (IV). The space

is wider than the abacus on the temple of Theseus (V). Finally, the width of the abacus is exceeded by one half by that of the space on the temple of Nemesis at Rhamnus.(VI)."[1]

Note 1.p.457. Chipiez, Le systeme modulaire. p. 32-33.

The number of columns of the portico at the longer sides of the edifice varies from one temple to another. It is sometimes odd, without any rule seeming to govern the fixing of the number adopted. This results from the adjoining Table, that does not claim to be complete, but where appear the best known temples.

11 columns; temple of Asclepios at Epidauros. Metroon at Olympia.

12 columns; Temple of Egina. Temple of Sunium. Temple of Nemesis at Rhamnus.

13 columns; Temple of Zeus at Olympia. Temple of Nemea. Temple of Demeter at Paestum. Temple D at Selinonte. At Agrigente, the so called Temples of Concord, of Juno Lucina, of Vulcan, of Castor and Pollux, of Jupiter Polieus.

14. columns; Temple of Segeste. At Selinonte, Temples A and S. Temple of Poseidon at Paestum.

15 columns; Temple of Corinth. Temple of Apollo at Bassae. Temple of Poseidon at Paestum. Temple R at Selinonte. Temple of Hercules at Agrigente.

16 columns, Heraion at Olympia.

17. columns; Parthenon. Temple C at Selinonte, according to Hittorf.

In the course of the sole work that represents to us the theories of the architects of antiquity, Vitruvius employs for briefly indimating the form and character of the edifices mentioned, terms that by the intermediary of the architects of the Renaissance have passed into the language of modern architectsr This nomenclature, as we have stated, w was created chiefly according to Ionic arrangements, and certain terms comprised therein apply to types, that according to all appearance were never realized in the Doric style. Yet all these terms have entered into current use, and it is important to definc them by figures, which will give their meaning to the reader without requiring other explanations. We have done this in Plate XXX; there will be found the temples classified according to the method of Vitruvius,

first according to the number of columns presented on the facade, then according to the places occupied in the entirety of the edifice and the manner in which they are arranged there. A third diagram gives the graphical translation of the terms employed by Vitruvius to characterize the arrangements, according to the greater or lesser distances between the supports composing it..

E. The Ante.

We have considered the necessity in which the Mycenaean constructor found himself, of facing and protecting the ends of walls built of crude bricks or of small materials; we n have shown how he obtained this result by means of a facing of solid planks. The ante (parastas) is nothing but the stone representation of that facing. Then it presents the appearance of a sort of square pier, that to the eye at least, reinforces the ends of the lateral walls of the cella, and gives them a more solid and stronger appearance.

As we stated of the Heraion, this procedure was used to form the ante in the first peripteral temples, where the wall was made of clay bricks; wood was still applied to that wall, but when men commenced to build the temple of cut stone, there can no longer be any question of concealing the courses under an arrangement of planks. Thenceforth, the ante became a continuation of the wall; but by its form it still recalled the type from which it came.

By the place that it occupies and by the part that it plays, the ante belongs to both the wall and the column. It is the prolongation of the wall, thus where the wall has a moulded plinth as on the temple of Theseus[1], that continues entirely around the ante (Pl. XXXII, 12); but the ante being wider and more massive than the wall, is at the same t time intended to present the appearance of a support. Where the temple is without an external colonnade, as on the megaron, it aids in supporting the entablature on the facade, on the peripteral temple it fulfils the same function for the special entablature of the pronaos. Like the column it is slightly inclined in the most ancient edifices toward t the interior of the building, and it is diminished from bottom to top. By virtue of this similarity, it likewise bears a capital.

Note 1.p.461. Histoire de l'Art. Vol. VI. p. 195, 500-501, 530, Fig. 189.

Where in the order the column has a base, the ante also sometimes has its own, that presents nearly the same profiles. In buildings of the Doric style, the ante rests directly on the stylobate, the regular courses with joints continuing. Those of the wall correspond to the drums of the shaft (Pl. XXXII, 12); but they never receive flutes. Those are reserved for the isolated support. Applied to the ante, they would have falsified the principle; they would have too much distinguished the ante from the wall. Yet there are rare exceptions; thus on one of the temples of Selinonte, at the end of the wall in the place of the ante, the architect has placed three fourths of a fluted column (Pl. XXXII). In this manner of terminating the wall is a blunder that has found imitators.

Note 2.p.461. Plate XXXII, 1-4. The ante of the great portico (basilica) of Paestum, after Labrouste, Pl. 19. 1. perspective view of the ante in the transverse direction of t the edifice, and 2, in the longitudinal sense. 3. Geometrical elevation. 4. Plan. -- 5-9. Antes of temples of Selinonte, after Hittorf, Arch. Ant. pl. 79. 5. Ante of the pronaos angular perspective. 6. Another ante, angular perspective. 7. Profile of ante 6. 8. Plan of ante 5. 9. plan of ante 6. 10. Plan of ante of temple of Poseidon at Paestum, after Labrouste, pl. 10. 11. Plan of the ante-column of temple D at Selinonte. (Hittorf, Arch. ant. pl. 33). 12. Temple of Theseus, elevation of the ante on the lateral facade of the naos, after Stuart (Antiq. d' Ath.III, pl. 10), and Iwanoff (Arch. Studien, vol. 9). 13. Ante of temple of Nemesis at Rhamnus (Antiq. ined.Chap. VI, pl. 9). 14. Ante of temple R at Selinonte (Hittorf, Arch. ant., pl. 43).

Particularly by the capital, the ante differs from the c column. Above the Doric column, the echinus and the abacus are clearly separated by the contrast of their forms, but have this trait in common, that in their robust simplicity they both always remain without any ornament; but the architect had no reason to repeat at the top of a wall, forms whose shapes on the column had been fixed by the imposed n necessity of starting from a circular plan to arrive at a

square one. If then the crowning of the ante by its position corresponds to that of the column, it always retains by its form its separate character; yet according to the time and place, the capital suited to it presents different aspects. In the 6 th and even in the 5 th centuries, what distinguishes it in Greece and in the greater number of the timples of Italy and of Sicily,is, that it is formed by a series of m mouldings placed on a facia, a sort of slab, a series in which were introduced eggs and beads in the 5 th century. (Pl. XXXII, 1-3, 6).

In these profiles of the ante, there is one trait on which it is necessary to insist, and that confirms the explanation that we have given of the origin of the member in question. If the primitive arrangement of the ante were unknown to us, we should have difficulty in comprehending why in the edifices of the classical age, the sides of the ante are frequently of such unequal widths (Pl. XXXII, 9, 10). Such narrow faces represent the post or plank of former times, they have the small[1] thickness of those; they reproduce their arrangement.

Note 1.p.482. Histoire de l'Art. Vol. VI. p. 730-731, Fig. 324.

On certain edifices of the colonies, such as the temple I at Selinonte and the basilica of Paestum, the ante has an entirely different appearance. There the ante is square in plan (Pl. XXXII, 4, 8). One of these antes recalls the appearance of certain Egyptian piers, an analogy rendered still more apparent by the very great cavetto that crowns it. (Pl. XXXII, 1, 2). There the capital of the ante seems to have desired to contest in amplitude with the column, by means of the contrast arranged between that great cavetto and the broad abacus that surmounts it. Elsewhere in temple T of Selinonte on the pronaos, we again find this same square pier; but at its top, this presents a rich ornamentation covering the entire slab interposed between the wall and the architrave. At the bottom of the capital is an astragal composed of disks and beads. Above,the entire field is filled by the development of a single motive, a central palmatium around which wind the scrolls, that do not fail to make one think of the forms dear to the Mycenaean ornamentist. (Pl. XXXII,

5, and Fig. 231.

Where one decorated thus the capital of the ante, he frequently called the brush to the aid of the chisel. This is the case for the ante of temple T of Selinonte, where the entire ornamentation was executed in color, for that of the temple of Nemesis at Rhamnus, for that of temple R at Selinonte, and for yet others where painting served to give more accent to the relief of ornaments modeled in the stone (Pl. XXXII, 13, 14). The monuments of the Acropolis of Athens evidence the same refinement. About the middle of the 5 th c century, architects will introduce into the facia of these antes by a free and desirable imitation, a species of annulets that reproduce those of the capital of the column. The differences existing between the capital of the ante and that of the column are explained, at least in part, by a reason of art. The conditions in which appeared the ante in peripteral temples, were not the same as those shown by the column. There the ante was only visible under the portico in the half light of the pronaos. To model its capital, one did not have to count on the play of a free light. It was then only a m means of accenting that portion of the ante, of giving it a bolder contour and a richer ornamentation, where between the reliefs and the hollows of the mouldings the bands were ornamented by designs, whose outlines were accented by the different colors. On ante temples, the ante appeared in the f full sunlight on the same plane as the independent supports; but there also it found good that enrichment of the decoration. The angles of the edifice, with the crowbeak moulding terminating them and the lines of shadow that vigorously m marked the projections of the stone, thus assumed a firmness contrasting with the receding rounds of the middle columns, which had the happiest effect.[1]

Note 1.p.466. On the crowbeak moulding, the elements into which it is resolved and its decorative values, see the observations of Hittorf, Arch. ant. p. 357-359. (Pl.LXXX, ..,22

The width of the front face of the ante is most frequently less than the lower diameter of the columns of the portico and larger than their upper diameter.[2] Further, there also is no absolute rule. In the same edifice the constructor n has sometimes used two different modes. On the temple of The-

Theseus, the ante of the pronaos nearly corresponds to the diameter of the column opposite it, while that of the opisthodome is much narrower. The latter was less in view; the architect has given it less importance.

Note 2.p.486. Vitruvius (IV, 4,1) prefers that the width of the ante should correspond to the deameter of the shaft opposite it; but his rule applies to the Roman ante, which is only a pilaster on which are repeated the motives of the column.

9. The Entablature.

The entablature is composed of three parts, the architrave, frieze and cornice. The architrave (epistyle) is formed of great blocks of stone of rectangular section. Each of these rests on two columns. The junction is made at the middle of the capital. Thus the architrave repeats the general form of the building, such as given by the stylobate, and it distributes on the columns the weight of the rest of the entablature and a part of that of the roof.

On small temples, the architrave could be made of a single block; but on temples of great dimensions, it is divided in the direction of its width into two and sometimes three parallel slabs. In the 6 th century it consists of two stone beams placed one behind the other (Pl. XXXIII). One divines the reason that decedid the constructor to double it. If a rupture occurred, the one beam not affected sufficed, at least temporarily, to carry the load of the rest of the entablature; further by this division, he avoided having to hoist masses handled with difficulty.

There are some edifices, otherwise in very small number, where the architrave is divided in several parts, not only in width but also in depth. That peculiarity is explained in the temple of Giants at Agrigente by the colossal character of the edifice. There are superposed three stone beams to compose the architrave, the bottom one being 3.94 ft. high, and the two others being 3.23 ft. each. This arrangement is not justified by the same reasons in certain other temples of moderate size, where on finds it, such as temple C of Selinonte and the old temple of Metaponte. The architrave is there composed of two superposed blocks. That arrangement was later abandoned, but it is proper to mention

it for the observation suggested by it. It shows that in the 6 th century in the period of essays and experiments, the architect designed his edifice without otherwise taking pa- pains to place the lines of it in proportion to the dimensions of his materials.

It is then a rule that the Doric architrave should retain in elevation its apparent unity. The sole decoration, or at least the only ornament cut in the stone, that it admits, is a band in slight relief, that borders its upper part. B Below this fillet that forms a continuous band appears, only below the triglyphs of the frieze, another fillet of less projection (Pl. XXXIII, 1).[1] Below the last fillet hang little appendages of cylindrical or conical form, known by the name of drops (guttas); they are generally six in number. Sometimes these drops are detached at the back (Pl. XXXIII, 11, 13),-- this is the same as the most ancient mode --, and sometimes they are adherent there. We have explained to what[2] arrangement of the ancient carpentry the drops corresponded. In some constructions these were changed into an ornamental motive. Men must not have delayed to lose the memory of the past played in the structure by the pins, that they represent, and they acquired the habit of inserting them with the same regular intervals on architraves that bore no frieze, for example, on those in the interior of the cella, that separate the second order from that on which it rests.

Note 1.p.467. Pl. XXXIII, 1-5. Entablature of temple R at Selinonte. 1. Perspective of entablature. 2. Crowbeak moulding that crowns the facia. 3. Plan of assemblage of triglyphs in the frieze. 4. Angle chamfers of triglyphs. 5. Axial section of a triglyph showing mode in which the upper part is formed. After Hittorf. Arch. ant. Pls. XII, XLII, XLIV. 6. Terra cotta cyma of the cornice of the treasury of Gela. After Dörpfeld, Die Verwendung von Terrakotten. Pl. IX. 7, 8, 9. Entablature of temple of Poseidon at Paestum. 7. Angle triglyph. 8. Plan of frieze showing the construction of the triglyphs. 9. Plan of architrave, after Labrouste. Pls. IX, X. 10. Triglyph of terra cotta of Selinonte, view showing section of a metope. After Durm, Fig. 88. 11. Section showing the drop placed beneath the same triglyph, after Durm. Fig. 84. 12. Plan of the channels. 13. Drop placed under a

triglyph of terra cotta. Hittorf. Pl. XXIV.

Note 2.p.467. Histoire de l'Art. Vol. VI. p. 709, 720; F Figs. 309, 310, 315, 316.

On the monuments of Greek architecture as presented today to our eyes, the architrave appears as a long lintel, entirely white and bare, while the frieze that surmounts it is frequently decorated by sculptured figures, and in any case is divided by the triglyphs. By reason of even its origin and of its function, the architrave has always presented a surface less ornate and less monumental than that of the frieze. One knows that one temple, that of Assos, where the architect thought to place sculpture as on the frieze (Pls. XXIV, XXXV); but that monument is an Asian temple, and we should not forget that in that country, art was subject to influences that we know imperfectly, and which have sometimes given a very peculiar character to its creations. In a any case, that innovation does not seem to have been approved, for it has found no imitators. If on terra cotta entablatures that came from Sicily,the posts and scrolls run on the architrave, that concerns only moulded pieces of small dimensions. In Greece proper, the architrave seems to have been sometimes painted red; but it does not appear that ornaments were ever designed on it, and that it was quite late and especially after the 4 th century, that men thought of fixing on the band by means of nails, shields of gilded bronze or inscriptions executed in great letters of metal; t those attached pieces commenced to invade the architrave o only when taste had become less refined and less pure. In the 5 th and 6 th centuries, if the fillet, regulas and drops were enhanced by color, the architrave from which these mouldings had a very moderate projection, extended while retaining the natural color of the stone or marble, without any painted or sculptured motive to interrupt its uniform and smooth extent. Thus it had a very sensible con.rast between the appearance of the frieze and that of the architrave, which contributed to distinguish the Doric entablature, and that gave it i.s own beauty and its expressive character.

The vertical position of the architrave above the column varies with the time, as shown by the adjacent Fig. (Fig. 233). In the most ancient example taken from the temple of

Poseidon at Paestum (1), that vertical falls in the interior of the column, whose shaft projects strongly beyond the line thus continued. At Bassae, this vertical strikes the shaft at about the middle of its height and penetrates it (2). At Egina, it only joins the shaft near its foot (3). Finally, at the temple of Nemea, the line prolonging the external f face of the architrave remains outside the shaft until it strikes the stylobate (4).

The arrangements employed at Paestum and at Nemea are then the two extreme terms of the series formed by all that have been adopted to define that relation between the 6 th and 4 th centuries. No more here than for other relations, can one establish in the variants of the theme a rigorously chronological order; but it no less remains established by the comparison so instituted, that from the beginning of Doric architecture to its more recent creations, the architrave has tended to move out on the column.

It is the same for the projection of the abacus from the architrace. That projection is much greater on archaic capitals where the curve of the echinus is very unnatural. Here we shall only examine the two extreme terms of the series. (Fig. 234). The examples are taken from temple S of Selinonte (1) and from the temple of Nemea (2). One sees that the profiles have a much greater and bolder character in the ancient type than in that furnished by the most recent edifice

What constitutes the Doric frieze and forms its originality is the alternation of triglyphs and metopes, the triglyphs being a sort of piers spaced at equal intervals between the architrave and cornice, and the metopes are rectangular slabs as ornaments, that fill the entervals between the piers

We shall not return here to the origin of the triglyph; we have stated how this motive was first suggested by the decorative facing that was received by the visible ends of the beams in the carpentry of the Mycenaean palace, was transferred and employed by analogy, even where it no longer corresponded to the internal construction of the edifice, and how it ended by appearing in the frieze of the portico on the four fronts of the temple. What finally demonstrates t that on that frieze, the triglyph is but a mere ornament, is the fact that on certain archaic temples, such as the t

temple of Poseidon at Paestum, the triglyphs do not present themselves as independent members; one finds two cut in relief on the same stone of the frieze.

The triglyphs were channeled like the columns, but their channels did not have the same section as those of the shafts, they were of a section distinctly triangular. Yet this rule comprises some rare exceptions. Thus at Metaponte on the temple called Tempio delle colonne Paladine, the architect desired to innovate. The section of the channels of t the triglyphs is a circular arc. A narrow groove sunk at t the bottom of the channel and a narrow fillet projecting f from the ground of each panel gives this triglyph a very peculiar appearance (Fig. 235). On the most ancient monuments, for example on the temples of Paestum and most of the temples of Sicily, they stop at the crossing of the narrow band surmounting the whole, in curves whose trace changes from one edifice to another (Pl. XXXIII, 1, 4, 5). There is very great variety in the sections of these channels; but what is never lacking are the channels themselves, with the lines of shadow that they draw on the surface of the frieze. To designate these grooves and the pier itself, to which t they give such a peculiar appearance by their depth and by the firmness of their edges, the Greeks employed words derived from the root from which came the verb glypto and so many other derivatives in current use, a root that has the sense of chiseling, of incising. That of these grooves was a glyph, and the pier with three bands was a triglyph. Nothing appeared more simple; but as soon as one casts his eye on the entablature, he cannot prevent a certain surprise. However different from each other may be the triglyphs, the front has only two large grroves; there are never three. It would then seem at the first moment better that the term diglyph would be best justified; but it has never been applied to this architectural member. One however experiences the need of understanding why the word triglyph has prevailed and how this difficulty is solved. At the side of each triglyph, it is said, where it adjoins the metope is arranged a chamfer with a width of one half of that of the two channels, of the two glyphs, properly so called. Two glyphs and two half glyphs make three, and the count is correct.

However correct is this addition, we ask ourselves if truly by it, it is proper to explain the term that embarrasses us. Doubtless there are but two channels cut in the front of the peer; but the flats enclosing them are necessarily three in number. Perhaps this trait particularly struck the mind of the spectator. Of the two elements forming the technical expression, the second indicates the procedure by which the effect is obtained, and the first alludes to the t triple enclosure.

If we find nothing on this subject in what has been transmitted by Vitruvius, of the doctrine of the Greek architects and believing the same Vitruvius, they had sought to render to themselves an account of the origin of the motive. Behind the stone or marble, they perceived more or less vaguely the beams of the ancient wooden temples, and they saw beams presenting their ends on the exterior, when the construction had just been completed, just as the saw had left it. The aspect of the ends of all those beams would have been unpleasinm;[1] they were not ignorant that one would imagine concealing them under the covering plates of stone or wood, a and that in this last case, this plate was composed of slabs that the painter was charged to decorate. A blue color mixed with melted wax increased the effect of the grooves that a accompany the joint of each slab. No arrangement of that k kind must appear in view in the edifices of the classical age; but it is curious that by conjecture those theorists came to conceive for those ends of beams a more of decoration very similar to that white distinguished the alabaster frieze found at Tiryns, that frieze which we have restored and placed in the entablature of the Mycenaean palace.[2] After all it is possible that the architects in the 5 th century had still retained some remembrance of the modes of o construction and of decoration, that we have described in regard to the edifices of the primitive age; the tradition of these procedures can be preserved in places on the buildings of small dimensions, in which the clay and wood still played the chief parts.

Note 1.p.478. Vitruvius. IV, 2, 2.

Note 2.p.478. Histoire de l'Art. Vol. VI. Pls.XI, XII, XIII

If Vitruvius did not seek to give a reason for the name

borne by the triglyph, he did not seem to have asked hemself why the ornament devoted to that member of the frieze has almost always been the channel, the triangular groove. There have been subtle and more or less ingenious conjectures made on this subject, that can be spared. The triglyph is channeled like the column because like that it is an ascending form or support, and this fluting serves to diveesify the frieze without breaking the unity, to create there by its regular recurrence a rhythm that pleases the eye. Between the smooth surface of the architrave and the field cut at equal intervals by these grooves, there is sought and desired a contrast, which emphasizes still more the blue color ordinarily assigned to the triglyph.

At least on the edifices where Doric architecture arrived at its perfection, why have not the channels of the triglyph the same section in plan as the flutes of the shaft? One believes that the reason of that difference can be divined. On the column the flutes are hollowed in plans increasingly distant from the eye; each of them gives a different shadow, and the softness of the curves lends itself marvellously to outline those shadows, whose gradual decrease renders more sensible and at the same time more firm the special form of the shaft. The frieze extends entirely in a vertical plane; it is further placed higher and more distant from the spectator than even the top of the column; so that the design of the ornament there may have all its value, it is necessary to depend on the drawing; it is essential to place there lines of shadow that would be more distinct and free, thus intersecting at half a right angle the vertical and horizontal planes.

The panels separating the triglyphs are called metopes. The etymology of the word is very clear; it is formed of meta, between, and ope, opening through which one sees; but what is more difficult to know is, what idea was attached to this term by the first, who first designated thus this member of the Doric frieze. Vitruvius gives an explanation of this word, that raises more than one difficulty.[1] According to him by ope was meant the holes arranged in masonry to receive the beams, on the ends of which was nailed the plank of the triglyph. The space comprised between those

holes prepared for the beams did not long remain open. They were closed as soon as the construction was completed, and that raised and finished should rather be in the view of t the workmen, who created the nomenclature and their technical language. It would then seem more natural for designating these intervals, had they adopted such a word as metadoche, between beams, a composition of which we know no e example.

Note 1.p.479. Vitruvius. IV, 2-4.

Yet men have tried to explain and to render admissible t the hypothesis of Vitruvius. Assume an edifice in which the ceiling beams do not form the external plan of the architrave, while the spaces between those beams are filled by masonry that accords with that plan. These would not be opai in the proper sense of the word, i.e., openings passing through the masonry and allowing one to look through; but he would have there at least rectangular cavities, that before the placing of the planks destined to form the triglyphs, would have remained open on the external face of the wall, and the space comprised between two of these holes would indeed be a metope in the sense intended by Vitruvius, literally "between holes." This explanation is the only one that gives a plausible explanation of the text of Vitruvius, and is ingenious but forced; it implies a purely temporary condition of the edifice, that can last only a few days or weeks.

Note 1.p.480. Hittorf in Les antiquities inedites de l'Attique. 1839. Note on p. 40, 41.

The best is perhaps not to seek in metope anything more than a simple doublet of a word well known in the current language, metoton. The metoton is the part of the face that extends from the root of the nose between the eyes and above them; it is what we term the front. Now like our word front, the Greek word metoton is frequently employed in a metaphorical sense to designate a facade of a building, for example, one side of a pyramid.[2] The form metope would also have had at first the same general sense of front, of a uniform and smooth surface; but usage, which never has to give a reason for its acts, took possession of it to assign to it a special purpose; it had applied it more particularly to the panels filling the intervals left between the triglyphs.

Note 2.p.480. In the contract drawn up for the execution of the works of the arsenal of Zea at the Piraeus, metoton designates a separate jamb 2 ft. wide on the facade, that stands between two doorways. (Line 23 of the text). See Choisy, Etudes sur l'architecture grecque, premiere etude; l' arsenal du Piree. Paris. 1881.

It has been admitted sometimes, that in edifices which preceded the temples of the classical age, those intervals were not closed, which would have formed a row of windows there between the beams, whose ends were decorated by the channels of the triglyphs. To sustain this hypothesis, they depend on two verses of Euripides in his Iphegenia in Tauris. Orestes and Pylades consult together; they seek the means of entering the temple to seize the statue of Artemis and to carry it away with them:- "See, says Pylades, between the triglyphs is an opening, cannot we introduce our bodies t there?"[3]

Note 3.p.480. Iphigenia. Verses 113-114. (Greek text).

Weil introduces a correction that makes the phrase clearer, but does not change the sense. (Sept tragedies d'Euripide. 1868. Paris.

These verses have been compared with those of the Orestes, in which the Phrygian slave relates that he escaped from t the palace over the cedar wainscot of the apartment of the women and the Doric triglyphs (Verses 1371-1372). There the preposition hyper seems to indicate that the poet conceives the fugitive as having passed above the frieze, through openings left between the timbers of the carpentry of the roof. that is more intelligible.

With several critics, we should incline to believe in an alteration of the text; but if we take it as given in the best editions, we confess to not understanding well what a arrangements the poet had in view. Assuming that those spaces were open and that Orestes passed through them, that inconvenient way would not have led him where he wished to go. He would have landed under the portico, if the temple had been peripteral, and probably in the vestibule, if it had only columns between antes. In both cases after that effort, Orestes would still have found himself outside of that sanctuary in which was enclosed behind doors of bronze, as he

says himself, the image that he proposed to carry off.[1] We do not conceive what type of real or imaginary entablature to which Euripides desires to allude; the phrase offers no satisfactory sense, except in the hypothesis of a very small temple, built on the model of what we have called the Trojan house (Figs. 167, 175, 176); now that hypothesis is contrary to the idea, that in more than one passage of the drame, the poet seeks to give of the magnificence of the sanctuary of Artemis Tauride. Then one cannot depend on this text to affirm that there were really temples on which the frieze presented the arrangement opposed to that conjecture. In whatever manner one interprets the word metope, according to t the elements composing it, it seems that it should arouse the idea of a solid between two openings, rather than that of an opening between two solids. Further, assume any frieze pierced by these openings; would there not have been as many breaches through which the rain, driven by the wind, would have penetrated into the interior of the structure, to attack the wooden timbers and prepare their destruction?

Note 1.p.481. Iphigenia. Verses 99-100.

As for the stone temple, however far one goes back in its history with edifices in which he follows the development, the space between the triglyphs is always closed by a filling in some manner or another. Finally, here is what renders improbable the hypothesis in question. Neither the triglyphs, that men have desired to regard as the ends of stone beams, not the metopes pass through the frieze anywhere; behind the stone bearing the channles of the triglyphs, as behind that where the field of the metope offees itself to the chisel of the sculptor, there is another stone of nearly the same dimensions (Pl. XXXIII, 3). On that one of its faces toward the interior of the portico, the frieze presents none of t the divisions that it shows on the exterior. On that side it is composed of a continuous series of blocks crowned by a simplified cornice. These blocks themselves form a third and some times one half the total thickness. One frequently finds them in contact with the backs of the triglyphs and metopes; but they are separated, where the edifice is of a great dimensions, by an interval filled by only roughed stones, and all parts of that masonry are connected together

and to the cornice by cramps. One sees what a compact character is presented by an entirety so created; if at a certain epoch the frieze had been pierced by symmetrical openings reserved between the triglyphs, would one not find in the construction some memorial or trace of that arrangement? Now in even the most ancient edifices, there is no longer even the slightest vestige of them; the entablature forms a real and solid wall over the columns, whose unity is interrupted by no opening (Fig. 236). It is said that these openings in which we refuse to believe may have had a reason for existence; on the stone temple, they would have rendered the entablature lighter by so much. Nearly all the burden of the roof would thus have rested on the triglyphs, by means of which the pressure would be transmitted to the architraves. The facts do not accord with that theory; this is verified by not limiting the inquiry to one or two edifices, which are too frequently taken as types. Doubtless t the block in which the triglyph is cut sometimes occupied the entire width of the architrave; but that is exceptional. In most edifices, especially in the 5 th century, the triglyph only corresponds to half that width, the other half being occupied by superposed courses. The condition of the triglyph is then the same as that of the metope; behind it, whether thick or thin, there is always a wall.

In certain temples of Sicily and in the Attic temples of the 5 th century, the metopes are slabs of marble, that at right and left are inserted at the ends in grooves made for that purpose in the sides of the triglyphs (Pl. XXXIII, 10). One would be tempted then to suppose that these slabs succeeded planks, that were themselves applied later to close a hole; but he would be greatly mistaken by imagining to find everywhere the arrangement ro interpreted. He would scarcely find it except where it was or should be ornamented by sculptures. The form of the slab and its small thickness f facilitated the labor. The marble slab was easily handled. The statuary made the decoration on it in high or middle relief; then he delivered it to the mason. He merely had to drop it into the grooves that awaited it; but the number of edifices is very restricted, where the figures project on the metope and give it a character of a scene. Where that

ornamentation is lacking, the arrangement is not that just described.

Properly speaking, the metopes and triglyphs then form t true walls, and the cornice rests on the metopes as much as on the triglyphs; also the joints of the cornice fall indifferently on the metopes and the triglyphs. This division i into metopes and triglyphs further not appearing on the internal surface of the frieze, it must be recognized that all the elements composing it almost equally with the wall behind them, aid in sustaining the part of the entablature surmounting them.

If in the edifices, from the point of view of construction there are differences in cutting and setting sufficiently marked between the blocks of tufa or of marble, that have the function of metopes, these also present a certain diversity in the appearance presented in elevation. In many temples these are bare panels, that seem to have been ordinarily painted red. (Pl. XXXVI D). There is reason to believe that frequently the brush was not satisfied to apply this uniform tone on the stone, but had traced there ornaments and figures; yet nothing remains of that decoration in color It is other wise where the architect appealed to the sculptor and left to him the field of all or a part of the metope but according to the edifices, that ornamentation was applied in a very unequal manner. There are temples where the m metopes of the frieze of the portico have remained smooth, while figures were carved only on those of the pronaos and opisthodome of the cella beneath the portico; it is thus at temple S at Selinonte (Pl. XXXVII) and at the temple of Zeus at Olympia. More frequently the external frieze is decorated by these figures; but there again, several cases are to be distinguished, according to which in the ornamentation of that frieze a greater or lesser place has been given to the sculpture. That sometimes appears only on the metopes of t the two principal facades. (Temples C and S of Selinonte, Pl. XXXVI). Elsewhere in the vicinity of the pronaos, the figuures continue above the first intercolumniations of the lateral facades; thus it seems desired to return them along t the sides, but they stop on the road; it is thus on the temple of Theseus at Athens. Only on the Parthenon are all the

metopes sculptured on the four fronts of the building.

The architect did not find at the first trial the best means of utilizing the assistance lent him by the sculptor in aiding him to extend on his frieze the image and movement of life. On temple C, one of the oldest temples of Selinonte, the method pursued is truly singular. Each relief is surrounded by smooth and strongly projecting surfaces cut in the same block; these form a frame that does not project beyond the figures executed in very high relief, which decorate the metopes (Fig. 237). These figures are then located in the recess of this panel. One divines the idea that suggested this arrangement. These groups of such constrained and awkward work, must have passed for masterpieces when executed. Those who set them in place were much occupied by protecting them from storms and weather to ensure their preservation. They succeeded; but this was at the cost of serious inconveniences. That enclosure had a very heavy appearance, and if in a certain measure, it protected the sculptures from the rain, it prevented the passage of the rays that would have modeled the forms. Imprisoned between these surfaces and under the ceiling, the figures were lighted only during a very short time, when the sun was near the horizon and struck them in front; they were bathed in shadow when the luminary was a little above the horizon or lighted the side of the temple.

One cannot delay recognizing the defects of the arrangement. As soon as art was freer and more fruitful, men dared to remove the figures from that case. Henceforth they were enclosed between the sides of the triglyphs and two plain bands, that crowning the architrave and that surmounting the triglyphs and metopes. All the parts of this frame have but a slight projection and cast only a very narrow shadow on the field of the metope. The figures then present themselves in full light, the illumination varies with the movements of the sun, and assume their full value in a "frisant" full light. (Pl. VII, D).

In the temple of Zeus at Olympia and in three of the temples of Selinonte (D, R and S), the external frieze with its triglyphs and metopes is repeated on a portion of the wall of the cella, either only on the wall that forms the

back of the pronaos, or also on that occupying the same situation in the opisthodome (Pl. XXXVII); but there for reasons previously indicated, it does not always present the s same proportions as above the portico. Thus at Paestum these metopes do not have a form approaching a square, like those of the portico; the width of the panel is there more than twice its height.

This entablature of the wall of the cell is lower on the whole, than that surmounting the colonnade; the cornice is much simplified and is without a drip; that protecting moulding would have been useless in a covered area, like that under the portico or in the interior of the temple. This f frieze is never prolonged in the peripteral temples along the longer sides of the building. On the other hand, in certain edifices belongong to the century when art shows itself wisest, the architect has sometimes placed on that surface a frieze of a different type, a continuous frieze analogous to the Ionic frieze. Instead of being subject to the rhythm of symmetrical divisions, this frieze forms a band on which extends without interruption a series of figures, and it is that frieze with neither triglyphs nor metopes, that one f finds over the external face of the wall of the cella in t two of the most important monuments that Doric architecture has left us, on the temple of Theseus and on the Parthenon. When the moment comes for studying them, we shall have to show how the architect proceeded to arrange the transition between that frieze, which does not properly belong to the Doric order, and the elements enclosing it. Besides he assigns to it only a part that remains entirely secondary.

On the Parthenon as on the temple of Theseus, the two friezes of different characters occupy different positions on the monuments. The treasury of the Megarans at Olympia offers a unique example of another combination. The two friezes there alternate on the exteeior of the building. The Doric frieze with its triglyphs and metopes decorates the principal facade beneath the pediment; on the longer sides of the edifice, it is prolonged by a sculptured frieze without triglyphs.[1] What results from a comparison of the three edifices seen above is the liberty enjoyed by the Greek architect; in all his creations, he essays to do the work of an

inventor, and one of the means that he employed to merit t that praise, was to borrow discreetly some certain arrangement from a mode different from that, whose general principles he accepted. The whole was to know in this work of adaptation, how to subordinate the adventitious forms to the typical forms imposed by the system in which was conceived the entirety of the work; it was important to avoid discords

Note 1.p.490. Olympia. Tafelband I, pl. 37.

We should indicate those variations; but one finds them in a very small number of temples, while the Doric frieze with its traditional divisions is nowhere wanting in the rich series of edifices that we shall study. It is then necessary to return to this frieze to define the rules according to which the architects arrange there the triglyphs a and metopes. This distribution is not made without some embarrassment. According to Vitruvius, that would even have been sufficiently serious for him to seek in it the chief reason for the change made in the 4 th and 3 rd centuries in the habits of the architects of Greece;[1] in order to no longer have to count on that difference of placing the triglyphs and of the inclination of the columns, they commenced about this time to no longer erect any but Ionic temples. That is an error, or at least an exaggeration. The restraint was not so great as Vitruvius pretends, since Greece before Alexander built Doric temples by hundreds. If from a certain moment Ionic temples were alone in favor, that is especially because the elegance of their forms was in a better relation to the taste, which prevailed in the course of the period called Hellenistic, both in letters as in the arts; also perhaps because men were conscious of having exhausted all the combinations suited to the Doric style, and that t they no longer hoped to find new ones, that would permit r rejuvenating the known themes by varying them. It is no less true that the Doric frieze, with the alternation of the elements composing it, offers a certain complication. By the natural effect of the play of those elements, a problem is set that doubtless has nothing insoluble, but which is suited by several solutions, among which the architect is obliged to make his choice, and each of which compels him to vary the secondary dispositions of his arrangements.

Note 1.p.493.Vitruvius. IV. 3, 1-2.

See the data of this problem, The rule adopted from the beginning is, that there must be a triglyph over each column, another in the part of the frieze corresponding to the interval between two columns, and finally a triglyph at each angle of the frieze. The middle line of one of the two triglyphs considered at then found to be the prolongation of the axis of one of the supports; in the other, if this line be prolonged, it falls exactly at the middle of the intercolumniation; but it cannot be the same for the angle triglyph, whose axis does not coincide with that of the column. No difficulty at all, if starting from the principle that dominates the rest of the frieze and applying this everywhere with mechanical regularity, for the triglyph of t the angle column is retained the position that it occupies over the other columns; there would then remain a half metope at each end of the frieze. This is the solution recommended by Vitruvius, and that the Roman architects adopted; o but Grecian architects do not even seem to have thought it admissible; there exists no monument on which they had recourse to it. On each facade of the Grecian temples, the frieze is terminated by a triglyph at the angle of the building. It appeared to the architect, that on this angle at w which the eye stops, something else than a half metope was necessary as a termination. That would have been too narrow for a group of figures to find spale there, and where the sculptor did not i tervene, what a mean and poor termination would have it been, for that frieze with strong divisions merely a plain panel of narrow dimensions! How different and happier would be at that point the effect of a triglyph with its bold relief, so well accented by the contrast of the c channels cut in it and filled with shadow!

From the point of view of art, nothing would then be better justified, than the method pursued by the creators of Doric architecture; but for the triglyph to be at the angle, it was necessary to move it to the end of the facade, and thus it found itself supported on the architrave, no longer at the middle, but about only a half from the capital of t the angle column. By reason of that displacement, if one assumes all the columns equidistant, the metope next the

last triglyph would be lengthened by the entire space over which that was moved. Doubtless the Greek architect, while attaching great importance to the general symmetry of masses and of lines, did not understand it in entirely the same manner as the modern architect. In his buildings the different parts of the whole and the intervals separating them p present desired rregularities, found nearly everywhere, o but which only a minute measurement has revealed; most of the time they escape the eyes of the simple spectator. It was entirely otherwise with the irregularity resulting from moving one of the triglyphs; the next metope was thus increased by at most a third. Such great disparity was very apparent to the eye; it seems to us that it must injure the entire rhythm of the frieze. Yet men sometimes adopted it directly in certain archaic temples; yet most frequently they sought to lessen or avoid it. The different solutions given for the problem may be reduced to four, that are represented in the opposite sketches (Pl. XXXIX).[1]

Note 1.p.494. 1; temple of Corinth, after Blouet, Expedition de Moree. Vol. III, pls. 77, 78. 2; temple of Poseidon at Paestum, after Labrouste, pl.I. 3; temple of Segeste, a after Hittorf, Arch. ant. Pls. 3, 4. 4; temple of Theseus, after Stuart, Antiq. of Athens, Vol. III, pl. 2.

The simplest solution is that adopted on the old temple of Corinth. There the central intercolumniation being scarcely wider than the others, the metopes are sensible equal (from A to A) except two (B, B), that are reduced at the angles. These are wider than the others; if the difference in width is not so marked as one would expect to find, this is because the intercolumniation next the angle is always narrower than the other intervals.

On the temple of Poseidon at Paestum, one proceeded more adroitly. That excess of width that was an embarrassment, was divided between the two metopes next each end of the facade. Thus two or rather those four metopes (BB, BB), are equal to each other, but are a little wider than the metopes between A and A; the inequality then becomes scarcely perceptible.

Another arrangement is happier and bolder on the temple of Segeste. The intercolumniatins are there unequal; they

are very frankly enlarged from the angles to the middle of the colonnade; but the architect did not take into account these variations, when he had to place his triglyphs in the frieze. He set them at regular intervals, without requiring himself to make the axes coincide with those of the columns or with the middles of the intercolumniations. As one sees by the lines let fall from the triglyphs on the columns, t there are two systems of axes independent of each other. B But the architect separates the frieze from the supports, and by the effect of the interposition of an intermediate member, the divergences are not apparent at the first view; to perceive them requires a warned or very experienced eye.

Finally, in the temple of Theseus we find the system that prevailed since the 5 th century. The architect there placed his triglyphs so that the distances between their axes should be equal or sensibly equal. The four middle intercolumniations being nearly equal, the axes of the triglyphs of t that part of the frieze are found to correspond to those of the supports. There remains the difficulty of the last intercolumniation (AA). The intervals between the triglyphs t there remain what they were elsewhere and the angle columns are set to correspond; therefore in spite of the moving of the last triglyph, there is no longer too much space in the frieze. The last intercolumniation is 0.87 in. less than t the adjacent one. Here the location of the columns then appears to have been subordinated to the arrangement of the triglyphs.

In the systems of the third and fourth examples, the slight differences caused by the slight inequalities of the m middle intercolumniation sometimes depend on the width of of the triglyphs and sometimes on that of the metopes, more frequently on the widths of both triglyphs and metopes. The corrections which thus become necessary modify in but a very slight measure the dimensions of the elements of the frieze; they are revealed only by minute and accurate measurements.

The cornice (geison) is the upper member of the entablature; above it is only the roof; it crowns the edifice and protects the subjacent parts from the effects of storms. On the longer sides of the temple, it supports the gutters that collect the water from the roof, on the facades it bears the

tympanum with the bands, cymas and fillets, that decorate that enclosure. What characterizes it is its corbelled arrangement, the strong projection that its entirety makes beyond the frieze.

The principal part of the cornice, that sometimes forms nearly all of it, is the facia or drip, a name due to the part that it plays in rain, one then sees the water that runs down the top of the building fall in drops from the cornice like tears. The cornice is made of a course that crowns the frieze; in front it overhangs for more that one third of its length (Pl. XXXIII, 1). On the part of that s stone that projects thus over space, the two upper and lower surfaces are not parallel; the lower surface is termed the soffit of the cornice and is inclined; it rises obliquely from the outside to the inside, an arrangement that results in opposing an insurmountable obstacle to the flow of the water, of that not arrested by passing the deep groove cut at the bottom of the vertical face of the facia, which is termed the drip. On some of the oldest temples of Sicily, the temple of Selinonte, the cornice is formed of two courses; thus it has nearly twice the normal height; we shall return to this peculiarity. At the treasury of Gela, the cornice has exceptional dimensions; but it was there entirely cut in a single course.

We have found nothing similar in Egypt; it pleases men to say so. On Egyptian buildings the parapet of the terrace n has the function of the cornice; with the beautiful curve of its ample cavetto and with the terminal band surmounting it, it plays a purely ornamental part. The climate of Greece had other requirements, where rains are frequent during a part of the year. In that country, as soon as men commenced to construct buildings for which they desired to ensure some duration, they felt the need of furnishing them with a crown, that was really suited to fulfil the function of a protection of the wall; they made the facia the principal member of the cornice. We have restored this facia in the carpentry that formed the entablature of the Mycenaean palace.[1] As for the drips, perhaps they likewise began in wooden construction; but it is more probable that it was the g gable roof placed on a stone entablature, that later led to

giving the soffit of the facia a slope easily arranged in the thickness of that course.

Note 1.p.499. Histoire de l'Art. Vol. VI. p. 715-721, Figs. 311-315.

When the constructor had passed from wood to stone, was thus occupied in rendering the cornice better fitted to fulfil its proper function, he no less with surprising fidelity retained for the lower surface of the cornice the appearance, that it presented in the primitive carpentry. Everywhere on the Doric cornice that surface presents the ornament that is called mutules.[2] The mutules have the form of o tablets separated by regular intervals, as if fixed against that ground, whose slope they follow. Their width is that of the triglyph; there is one over each triglyph and another above the middle of each metope. From the underside of these tablets are detached and hang in the air small appendages, whose form is cylindrical or conical, according to the edifices. Arranged in three rows in depth, they are six in number lengthwise; there are then 18 per mutule (Pl. VII, D). The motive is similar to that already mentioned below the triglyph (Pl. XXXIII, 1); wherever found, either on the architrave or on the cornice, it is always that to which V Vitruvius has given the name of drops. Having everywhere t the same character and the same appearance, it necessarily has everywhere the same origin. If the drops have retained their marked places in the forms of stone construction, they owe it to the method that the workman has taken here and e elsewhere, to transfer to stone the forms that were produced in the use of wood. On the cornice they represent the pins that connected together the planks destined to cover and c conceal the ends of the beams.[1] Men have also sought other explanations of the genesis of the motive in question and of the vogue that it has enjoyed; but each of those theories implies gratuitous conjectures and vain subtilties.

Note 1.p.500. Histoire de l'Art. Vol. VI. Figs. 512,513.

At the top of the cornice is a crowbeak moulding, which is generally an addition; above it is a very high moulding inclined to the outside, that is called a cymatium (literally "little wave") and that owes this name to the double curvature, that it frequently presents (Pl. VII, 3, E; VIII,

Pl. XXXIII, 6). On most edifices of the 6 th century, the cymatium seems to have been of terra cotta; elsewhere it was made of a stone harder than that used for the rest of the edifice. On the pediment where that cymatium terminated the structure and was seen against the sky, it had its entire development and all its value.

On the principal facades of the temple was a double cornice, that forming a part of the entablature, properly so c called, and that forming the rake cornices of the pediment. These two enclosed the tympanum. If there had not been some analogy between the three sides of this triangular enclosure, the eye would have been perplexed. The architects had taken care to retain the facia in the in the inclined branches of that border, in that cornice belonging to the pediment, though giving it a little less height. The projection of that facia is further the same as that given to it in t the cornice proper from the frieze. On the other hand, the mutules are wanting; they are never found in that place. (Pl. VII, D). The stone entablature supported by the colonade was retained, because it succeeded without transition to the entablature of carpentry; but the pediment only appeared with the gable roof, whether of earth or of carpentry, and when this mode of covering had prevailed, one was already far from what can be called the age of wood. That had not left any model that could be copied, for the decoration of the pediment, which was unknown to it. If the architect had also desired there to become inspired by the decoration in wood, that imitation would have produced for the pediment forms very different from those that he adopted; he would have had to represent the ends of the purlins that supported the rafters of the roof (Pls. V, VI). Nothing compelled him to take this method; able to regulate according to his intention the arrangement of this part of the building, he carried the facia of the cornice along the two slopes corresponding to those of the covering. By this means and due to the projection of this cornice from the tympanum, he gave to his pediment an enclosure that drew two beautiful lines of shadow of singular firmness, that ensured an efficient protection for the art work that he can have the idea of demanding from the sculptur to fill that space.

The entirety of this pediment with its cornice presented a very happy contrast between the plane surface of the tympanum and the richness of the enclosure, on which the brush of the painter had lavished his most beautiful ornaments, eggs, frets and palmatiums. This cornice, ornamented and s sumptuous, was like a diadem placed on the brow of the noble edifice, yet enhanced its imposing majesty. (Pl. VII, 8).

That cymatium of the rake cornices of the pediment sometimes continues with the same section and the same water spouts entirely around the edifice. Also frequently it stops at the side after returning around the angle; the cymatium is then lacking on the cornices of the lateral facades.

As a general rule, the drops of the mutules were cut in the material of the blocks forming the cornice; yet on one of the treasuries of Olympia, they were all inserted; the workman set them separately in holes, where they were fixed with lead. On the temple of Poseidon at Paestum, they were set afterwards in the same manner, but doubtless with less care; their places are now only marked by holes in which t they were formerly inserted. This procedure was frequently employed to replace those broken off by accident. On more than one monument may be perceived the traces of these repairs.

The great taste of the architect knew how to utilize for the decoration of the cornice, the elements intended to collect the water from the roof and to discharge it outward. On the most ancient edifices, such as the treasury of Gela, he was contented with water spouts of cylindrical form; but these spouts had a very poor appearance; (Pl. VII; Pl. XXXIII, 6; ; Fig. 238); later he had the habit of giving these spouts the form of heads of animals, most frequently the muzzle of a lion. Under the chisel of the ornamentist, these heads f frequently assumed a very beautiful character (Pl. VII, 9; pl. IX; Fig. 239).[1] The mouth is widely opened, and the water runs over the pendant tongue, whose top is hollowed in the form of a channel, an artifile unseen by the eye from below. Why was the head of a lion chosen in preference to all other forms, to fulfil that function? An Egyptian fashion has been alleged, caused by astronomical considerations; it has also been stated that Greek mythology assigned to the lion the part of protector of springs.[1] Neither of these ex-

explanations seems inposed. This type had become familiar to the Greeks by frequent use made of it in oriental art, by the numerous examples of it offered to them by the objects of every kind, that they derived in various ways from Egypt, Syria and Asia Minor; what finally made it successful was especially, that it has nobility and beauty. It is related, that one time it was first devoted to that use by the Corinthian potter Boutades.[2] Whatever should be thought of this tradition, once that the motive was invented, it had sufficient success to ramain for centuries the only one in current use. While our constructors of the middle ages have given very diverse and frequently bizarre forms to the gargoyles of their edifices, the Greek architect, when he wished to lend to his an ornamental character, nearly always used only the lion's head; yet at Epidauros, the gutter of the temple of Artemis bore the head of a dog instead of the traditional lion's head. These heads were sometimes gilded. On temples where art displayed all its resoucces, they were modeled with a breadth of style, that gives reason to believe that the head was designed by the master sculptors, to whome had been entrusted the execution of the figures of the pediment and of the frieze. In the same edifice, these lions' heads were not always alike, Grecian art loved so much to put invention and variety into even the least details

Note 1.p.501. The museum of Palermo possesses a very beautiful series of these water spouts in the form of a lion's head; they came from different temples, and one can there follow the development of the type, from the archaic severity to the most ancient examples to the softer and looser execution of the late time of art.

Note 1.p.502. Durm. Baukunst, p. 137-138.

Note 2.p.502. Pliny. H. N. XXXV, 15[2].

Note 1.p.503. This was noted at Metaponte. (De Luynes & Debacq. Metaponte. Folio 33. p. 42).

Where the large cymatium with its spouts no longer exists on the longer sides of the temple, the water reaching the two lateral facades, after having run down the slopes of the roof, ran off by means of the spaces separating the lower ends of the covering tiles; from the cornice they fell directly on the ground. On temple C at Selinonte, the water

seems to have run through openings of irregular form equally spaced in a beautiful cymatium of terra cotta, that separated palmatiums (Pl. VII, 2; Pla VIII). It is rarely thus. On two temples of Selinonte (B and S) the gutter continues along the longer sides and discharges through lions' heads, that regularly open in the cymatium.

In seeking to give an idea of the cornice, of its character and appearance, we have so far assumed ornaments carved on the stone or painted on its surface; but the chisel and the brush could only do their work with some precision, when they attacked either marble or limestone of very close grain Where the architect had no materials other than a porous tufa full of shells, it was necessary to cover by a coating of stucco all surfaces of the stone, which gave the monument something of the appearance of a monolith; but this covering with stucco was a very delicate and very lengthy operation. At certain points of the Greek world, another expedient was employed to remedy the insufficiency of the materials. On no part of the building was there greater need of clean lines and vivid tones than on this cornice, which as indicated by its name (corona in Latin),crowns the temple and is detached against the blue of the sky with the greater vigor, when the tones decorating it are more vivid and warmer. Terra cotta was more appropriate than any other material to serve for covering the part of the monument menaced most by storms. One scarcely has to explain that in these conditions when facings of painted claw were found in the form of fragments,in the ruins of several temples of Italy and of Sicily, the architects that colloceted them could hardly divine at first what places these facings formerly occupied in the edifice. They believed that they could not utilize them in the restorations that they presented, except in the interior of the temple as coverings of beams that supported the ceiling.[1]

Note 1.p.504. This was the case for Debacq and for Hittorf himself.

That was a hypothesis which nothing has since confirmed. The German excavations of Olympia have shown the terra cotta employed in an entirely different manner. In demolishing, not far from the treasuries, a Byzantine wall built of ant-

antique fragments, there were found a number of wrought stones in which were recognized with entire certainty the remains of the treasury erected by the Sicilian city of Gela, and the various parts of its entablature. Among those pieces of tufa were some, whose surfaces were formerly visible and were dressed and polished with care, while elsewhere they were only roughly pointed, which permitted the inference t that in the edifices they were covered by overlays, which concealed them from view. Those facings were also found in the wall itself. These are facings of painted clay, whose form is that of long cases with only three sides. Their dimensions agree exactly with tose of the defferent cornices brought to light by the excavation; there are those of the cornice of the lateral facades and of the straight cornice, and that of the rakes of the principal facades. What completes the proof that all those pieces of terra cotta were employed to conceal the external faces of the cornices, that face merely roughed, are the round holes formed in the clay, to which correspond nails that are still seen fixed in the stone on the top of the cornice (Pl. VIII). This sort of o boxes, without that precaution, would have adhered to the member whose contour they fitted; but men feared the effects of the violence of the wind or of shocks of the ground, and for greater safety, they had recourse to this mode of fastening to prevent all displacement.[1]

Note 1.p.505. W. Dörpfeld, F. Gräber, R. Borrmann, K. Siebold. Ueber die Verwendung von Terrakotten am Geison und Dache griechischer Bauwerke. (21 st programme of the Winkelmann festival). 31 pp.+ Figs in text+ 4 plates in color.1881

Above this clay facing the architect placed a cymatium of the same material, which completed the two cornices on the facade, the horizontal and the raking cornices of the pediment. The profile of this cymatium recalls that of the Egyptian cavetto up to a certain point; but the hollow is less and is flatter (Pls. VIII and XXXIII, 6). One notes that t the gutter continues here on the horizontal cornice ar on the raking one, a very exceptional arrangement. On the cymatiums of the lateral facades, cylindrical spouts project strongly and serve as ejectors. Concealed by this cymatium, the upper angle of the facia needed no decoration; there is

painting, only on the vertical surface and on that attached to the bottom of the cornice; this soffit was also visible from below. (Pl. VII, bottom).

These verifications have been a light; they finally permit the assignment to their true places of the fragments of the same kind, that had been found in very great abundance in magna Grecian and Sicily. The principle was the same everywhere, but the arrangements varied. For example, see temple C of Selinonte, one of the edifices on which one seems to have made the most beautiful use of clay for the decoration. This covering there does not cover the entire cornice; it always covers only the upper portion. The cornice was f formed of two superposed courses.[2] There was first a cornice, whose soffit presents the peculiarity that the mutules are alternately narrow or wide, according as they correspond to the metopes or the triglyphs of the frieqe. Above in the v vertical plane are perceived traces of stucco, which proves that the stone was visible for the entire extent of this b- band. This block supported another of nearly the same section, en the top of which were made gains that received the ends of the rafters of the roof. There in what one has found of the elements of that second course, the tufa no longer has the sage appearance; it is only roughed eveeywhere; no trace of stucco. By the nature of the work, one divines that nothing of that course was visible, that its front face was concealed from view by a cymatium of terra cotta; now there have been collected from entirely around the temple numerous fragments of a beautiful cymatium of that material, whose height is the same as that of the blocks forming the second course (Pls. VII,2; VIII). Those fragments of the cymatium belonged to the sides of the temple; nothing of the cymatium of the pediment has been found; it is then impossible to k know if those two cymatiums were alike, and in case they w were different, how they joined. In these conditions we co could not think of introducing them in Fig. D of plate VII; then we have retained everywhere the crowbeak moulding, that must crown the cornice, according to Hittorf. This detail has only a very secondary importance in this general view, which was especially intended to give the idea of the character of power and of noble severity presented in the most

ancient examples by the Doric temple. Borrowed from the geometrical drawings of Hittorf, all other elements entering into that perspective were the subject of exact measurements, and leave no place for doubt.

Note 2.p.505. Dörpfeld corrects the eeror committed in t this respect by architects, who attempted to restore the t temple, and who were mistaken from not knowing all the fragments. (Ueber die Verwendung, etc. p.8).

The mode of setting here was no longer entirely the same as for the gains that extended along the entire cornice. I The stone of the upper cornice sligntly receded from that of the lower course; the bottom of the clay member then rested on that projection. The covering there had only two sides, the front face on which was applied the ornamentation, and the horizontal return fitted into a groove made in the bottom of the blocks of the last course. The bronze nails that were still fixed in the tufa corresponded by the places occupied, to the holes pierced in the narrow return of the clay covering. Further, that did not stop at the cymatium; it was continued by the gutter, above which also extended a running motive, that by its large openings produced the impression of a series of tile fronts. Still all that was in a single piece, the gutter, its return, the palmatiums and the lotus flowers surmounting it, moulded in the same slab of clay (Pl. VII, 2). This terminal member projected strongly from the rest of the entablature; thus the soffit was ornamented by a fret, like the cornice of the treasury of gela. The entirety of that decoration gives a high idea of the skill of the ceramists, that the architect took as collaborators, so as to supplement the inefficiency of the materials at his disposal.

If for these artisans was required a singular skill for fashioning pieces of such complicated arrangement and also of great dimensions, at the same time they made proof of great taste in tracing their profiles and their ornamental motives, as well as in the choice of the tones by means of which they accented the reliefs and the designs of their mouldings. Those tones and motives will be studied elsewhere with the entirety of polychrome ornamentation. Further, it does not appear that the habit of employing terra cotta

was thus general in the Grecian world; it seems to have remained peculiar to certain regions, to those where the materials supplied by the quarry were least beautiful. In Magna Grecia and in Sicily were those facings most used. If s some treasuries at Olympia had cornices so covered, this p peculiaritn in their decoration is explained by the fact that cities like Gela and Metaponte, when they constructed their chapels in Elis, remained faithful to the traditions of their local architecture. There have not yet been found in the Peloponessus, even where the stone was only a very coarse tufa, remains that appear to belong to pieces of that kind.[1] Yet the antefixas of the Heraion suffice to prove that very early, the potters of that country were sufficiently advanced in the practice of their art to be able to furnish to the architect coverings of this sort, if he pleased to require them.

Note 1.p.507. Dörpfeld, etc. Ueber die verwe etc. P.11,12.

In any case, it is difficult to refuse to see in the use of these facings an indirect confirmation of the observations, that ue presented on the subject of the transition from wood construction to stone construction.

When one examines the remains of edifices whose material is a more or less porous tufa, he ascertains that two different methods were taken to conceal the defects of the stone to create smooth surfaces on which was developed the ornamental designs. Nearly eveeywhere in Greece, the limestone was coated with a fine and tenacious stucco, impermeable to rain and well suited to receive the work of the brush, Besides, on the other side of the Adriatic while using stucco, men also employed slabs of clay on the upper part of the e entablature, to cover the facia and to form the cymatium a above it.

Let us consider the coat of painting applied on the stucco especially on the upper parts of the edifice; does one not have reason to see there a memory of what in more ancient edifices would have been extended to the wood to protect it and vary its appearance? Further, we have found at Tiryns and at Mycenae coatings of lime on which color was applied, laid on the walls of crude bricks or of rubble. Thus also from structures of that kind may have been borrowed this

method of stucco, that was applied to stone of poor quality on many temples.

The second of the procedures that we have described belongs more nearly to construction in wood; it recalls it in a clearer and more direct fashion. The panels of glazed terra cotta were fixed on the stone by nails; now nails are not made for stone; they can find place only in holes drilled with the point, and also then do not render their the same services as when they are driven toto the elastic fibres of oak or beech. Then where anciently one had been accustomed to nail on wood the facings of metal or of clay, he could continue to employ nails thus when stone is substituted for wood in the entablatore; it could be nothing but a survival, the effect of a habit contracted in a time when wood formed the entire body of the monument. To pierce the wood and sink it it were originally forged the nails, that on the cornices of Selinonte and of Gela attached to the bands of the tufa the slabs of terra cotta, decorated b: vivid colors, which the architect, even when he no longer built except in stone, continued to demand from the potters, whose aid had been so useful to his predecessors, to those who had to derive from the adjacent forest all the elements of their edifices.

Note 1.p.508. This what has been very well indicated by Dörpfeld (Ueber die verm. etc. pl. 12).

10. Roughing and Hoisting Stones. Joining Stones.

In the entablatures are members that lie over the spaces in different ways; such are the architraves, that are loaded by a great part of the height of the roof and span the intervals of the intercolumniations; such are also the cornices that make a strong projection from the face of the frieze. It is unnecessary to form a single body from all these pieces, which have different forms and functions; it is essential to establish a connection between them, which makes all solid, and that defies all the effects of shocks in the ground frequently affected by earthquakes. Cut stones being always set dry, men provided for that need by the use of m mechanical connections, dowels of wood or of metal that connected in a vertical plane two drums or the beds of two courses, cramps of bronze or of iron, which in the horizontal plane joined together the blocks and held them in place (Pl. XL).[1]

In many cases the wall can omit these cramps; men indeed abstained from their use when building the ramparts of cities. The thickness of the mass sufficed to ensure its solidity. It was not the same in the temple. The walls were thin and high; more precautions were required to ensure their stability; together with the columns, they aided in supporting t the roof. In these conditions it was impossible for the architect not to employ the same methods in all parts of the edifice, to hold together all the elements of construction. Taken in its entirety, the temple is further a work of art, that of its creations in which Geeek art has held in honor to giving more care in even the least details. Then we cannot be surprised to meet with these fastenings everywhere, from the stylobate to the cymatium one finds them in the w walls of all cellas.

Note 1.p.509. 1; pl. XL, 1, column of temple R at Selinonte. Hittorf. Pls. 42, 43. 2; column of temple of Zeus at Olympia. Olympia, pl. XIII, 2. 3; column of theple of Poseidon at Paestum, Labrouste, pl. V, E, F. 4; fastening at Olympia, treasureis of Selinonte. Olympia. Pl. 37. 5, 6; different forms of cramps. 7; entablature at Eleusis. Antiqs. of Attica. Chap. V, Pl. 4. 8; Entablature of Rhamnus, same. Pl. 5. 9; upper part of entablature of treasury of Megara. Olympia, pl. 38. 10; the cramp fixed there in the hole. 11; temple R of Selinonte; cornice. Hittorf, pl. LIV, 4. 12; lower courses of the wall of the Heraion, means employed for obtaining close joints. 13; temple C at Selinonte. Inserted d drop. Hittorf, pl. 24. 14; wall of opisthodome of temple ? of Selinonte. Hittorf. Pl. 14. 15; architraves of temple of Nemesis at Rhamnus. Antiq. Ined. Chap. VI, pl. 8. 16; architrave from Egina. Garnier, pl. 17. 17, 18; wall of treasury of Syracuse. Olympia, pl. 34. 19; cramp at Z. 20; triglyphs of treasury of Gela. Olympia, pl. 40. 21; walls of treasury of Sicyon. Olympia, pl. 27.

Wooden dowels were employed in some temples to connect together **certain** parts of the entablature; but they rendered service particularly between the drums in the erection of the columns. Inserted at the centres of those drums and in square holes, prisms of hard wood to connect the drums in pairs. These dowels were very well protected from dampness

by the .ccurate adhesion of the surfaces of the drums; they are sometimes found nearly intact only in edifices of the 5 th century. Further, in the temples of the 6 th century, the dimensions of the holes cut at the middle of the drums permit no doubt to remain concerning the use of wooden dowels. These holes were generally square, as in temple R at Selinonte (Pl. XL, 1); round ones are also found, for example in a shaft of the lower order to the temple of Poseidon at Paestum (Pl. XL, 3).[1]

Note 1.p.510. Hittorf & Zanth. Recueil des monuments de Segest et de Selinonte, p. 515.

In parts of the edifice other than columns, metal was employed in preference to wood. Bronze and iron alone lent themselves to an arrangement, which must have been adopted very early on all workyards; they alone support without injury the contact of melted lead, which men had the abit of pouring into the holes for fixing. Lead had the double advantage of being fusible at a very low temperature and of r resisting oxidation. Poured while fluid into the cavities in which had already been placed the dowels or cramps, it entirely filled them; it fitted those fastenings, that it thus protected from all chance of moving; at the same time it enclosed them in a covering, that sheltered them from r rust. By wooden dowels were connected the drums of columns of the temple of Zeus at Olympia (Pl. XL, 2);[2] but for greater precaution, the workmen always introduced there metal pins in some places. In the section opposite,see the lower joint; it was intended to reinforce it, and between the two drums near the centre of the shaft was arranged a space that permitted the enclosing of the pin by a lead cap, a mode of fixing, of which examples are also found in other parts of these edifices (Pl. XL, 3).

Note 2.p.510. Olympia. Textband II, p. 6.

These dowels doubtless rendered a very appreciable service by the intimate union that they established between the beds of courses vertically;;thus they give to a wall a consistency that approaches that of a monolith. It is further in the horizontal plane that these fastenings are most necessary in the absence of all mortar; thus the mason has multiplied them most there. Very close together and set in different

ways to prevent displacements, which without them might be produced between the materials only juxtaposed. This is made especially apparent by a perspective view of the entablature of a treasury at Olympia (Pl. XL, 9), and the plans of the architraves of Rhamnus and of Egina (Pl. XL, 15, 16). There are cramps of all sorts. The simplest and most frequently employed have the form of an I (Pl. XL, 17), others that of an H (Pl. XL, 10), and still others that of a Z (Pl. XL,19) or of an N (Pl. XL, 20). Cramps are also made of a wide band of metal with its ends turned down to fit into holes sunk in two adjacent stones; one would call it a handle (Pl. XL,4,5,

Iron has been by far most frequently devoted to this purpose; it alone was employed by the mason in most edifices of Sicily, at Olympia and in all the temples of Athens. Bronze cramps are only found exceptionally at Samothrace, Epidauros and sometimes in Sicily.[1] The Acropolis of Athens has furnished fragments of edifices built of tufa, where the fastenings have been entirely executed with lead alone;[2] but it was n not possible for that practice to find many imitators; lead is too soft to establish a very firm connection between the stones. On the con.rary, it could suffice when it was only necessary to fasten light covering pieces on which no pressure was exerted. Drops were very often fastened thus; a n narrow channel was cut in the stone where they were to be attached, and that was continued to the drop; this was set in place, and the melted metal was poured into the hole ((Pl. XXX, 13).

Note 1.p.513. Durm. Baukunst. p. 79-81.

Note 2.p.513. The same.

The custom of employing these fastenings must have extended in the 6 th century among the workmen who labored everywhere in building temples. There is no trace of them at t the Heraion of Olympia, in what remains of the wall of the cella. By an artifice in cutting there, the constructor sought to obtain a close adherence in the end joints between the blocks of limestone forming the substructure of its walls of crude bricks. Slightly relieved at the middle, the surfaces only touch at their edges; they touch each other like two lips pressed against each other (Pl. XL, 12).

Even when the use of fastenings was everywhere employed,

men continued to have recourse to certain special ways of cutting stones, at least for the parts of the temple whose equilibrium was least stable. One can judge of it by the cornice of temple R at Selinonte (Pl. XL, 11); in the stones composing the entire cornice, a projecting tenon was reserved at a joint, that corresponds to a recess of the same s shape sunk in the opposite joint. By that jointing, they n hoped to prevent all lateral displacement of the elements of the cornice; but what skilful and costly work was imposed to obtain this result! There also is emphasized the idea evidenced by the complication and multiplication of the fastenings with iron and lead; men have the firm intention to spare nothing to ensure the duration and integrity of the noble edifice, which serves as a habitation for the protecting gods of the city.

These conscientious scruples are no less marked in the w work of roughing, which is done on the workyard before setting it in place, work that we can follow in all its phases by observations made on numerous edifices, that by a series of various circumstances have never been finished. The principle that inspired the constructor is easily seized; he i desired to avoid at any cost, that the stones cut by him s should risk receiving any injury in the course of the construction, that might damage them, causing cavities on either surfaces or edges, which it would not be possible to remedy except by repairs, always awkward and precarious. The means of preventing these accidents was to retain everywhere an excess of material during the entire duration of the preliminary operations, that would fall only at the time of the final dressing. These systematic procedures of roughing can nowhere be better studied than in the temple of Segeste; t the edifice remained in the roughest state (Fig. 130).

See at first the column, seen in section and perspective (Pl. XLI, 1, 2). At the four corners are seen prisms, nearly rectangular, that border the edges. Those prisms were not ornaments intended to remain after the work was finished; there is nothing similar on any Doric capital; those appendages are protections, intended to protect the angles of the capital, exposed to strokes that might have broken them, d during the duration of the work. The blocks composing the

architraves afford opportunity for the same remarks concerning the fillets beside the joints (Pl. XLI,3). These fillets form a border everywhere that the blocks must first come in contact and that circumstance clearly indicates their character; they have been reserved to prevent two sharp edges from being damaged by striking each other when the surfaces of the joints are set together. These fillets no longer remain on the architrave except next the cella; they had already been removed on the exterior when the work was interrupted, never to be resumed. The same methods have been applied to the blocks of very regular masonry, of which the stylobate is built. The bosses there occupy the middle portion of the surfaces and served to protect them from wear; as for the knob that projects on the front of the stone, this is nothing but a projection that serves for hoisting and handling the stone. All these bosses and knobs must disappear under the same tool, when the edifice received the final t treatment. A narrow chisel draft all around the joints indicates the plane to which must later be brought the surface.

Note 1.p.514. Pl. XLI, 1, section; 2, elevation, of a column of the temple of Segeste. After the geometrical drawing of Hittorf.Pl. 4. 3, architrave of the same temple, after Hittorf. 4; column of temple of Nemesis at Rhamnus. Ant. ined Chap. VI, pl. 10. 5; fragment of a Doric shaft found at Olympia. Olympia. Pl. 35. 6; Course of temple S at Selinonte, after Hittorf. Pl. 57. 7; courses of propyleion at Athens. 8; application of stucco on a column of Paestum.

At temple S of Selinonte is a little different arrangement, a mode of cutting that does not emphasize the care of making the vertical joints correspond with the sinking.(Pl. XLI, 6). It is scarcely necessary to add that they remain faithful to these practices in the constroction of the marble edifices of the 5 th century, where the care for perfection was carried farther than in the tufa temples of Sicily; this is s seen in the substructure of the propyleion at Athens (Pl. XLI, 7). With their symmetrical arrangement these projecting panels do not displease the eye; it finds them on a number of edifices not entirely completed; it will become accustomed to them so well, that it will not fail to find some pleasure in the contrast between the rough surface of the boss

and the polished one of the directing chisel draft. Thus on many buildings of the Hellenistic epoch, these preparatory cuttings have become the final ones; what was merely an expedient has changed into an ornamental motive.

It is with columns as with entablatures and walls; whether monolithic or composed of several drums, they were cut with smooth shafts in the portico, the pronaos or the cella. On the temple of Segeste, they have all remained in that f first state, that in the mind of the architect could only be a temporary condition. Grecian art never conceived the Doric column without the luxury of flutes; but what risks would it not have run, if the shaft had already been completed when there still had to be hoisted the blocgs intended for the entablature, and the movable scaffolds were erected against the facades and then removed! The fillets and annulets could be cut without inconvenience on the Workyard before setting; they were sheltered when the support was once on foot, by the strong projection of the capital; but the body of the column could not count on the same protection; it would have been difficult to avoid injuries to those sharp edges, that in the Doric order extend between the parallel channecs. This work of cutting the flutes was then r reserved for the end of the undertaking; but at least when marble formed the material of the edifice, the foreman of the workyard was not satisfied with rounding his column; he started it, as one would san for a work of tapestry. He fixed the number of flutes and drew their curves; then he executed them for a short distance at the top drum on which rested the capital and just at the bottom of the one resting on the stylobate (Pl. XLI, 4); one even finds these sometimes cut entirely around the sinking formed in the slab of the stylobate on which rests the lower drum. When the erection was once completed, the moment came to finish and dress the edifice, the workman only had to follow these very precise indications, to connect together the two very narrow bands crossed by the flutes.

At Segeste is is not as at Rhamnus, as on the temple of Demeter at Eleusis, or that of Apollo at Delos; the flutes are not started beneath the columns and at the foot of the shaft. This is because the execution on temples of tufa

does not permit such minute care. The flutes were cut at o once on the tufa, and then on the drum thus diminished was laid a coat of stucco sometiess 0.32 to 0.39 in. thick. In modeling this coating, the tool easily gave to the edges t the neatness and vigor that could not have been obtained w without difficulty in a coarse grained stone. Fig. 8 of Pl. XLI represents a shaft at Paestum half covered on a coating of stucco, of which only a few remains exist today in those ruins.

At the upper parts of the building commenced the general dressing. From the cornices one descended to the frieze and the architrave, then to the capitals; the flutes were then chiseled on the shafts of the columns. A drum found at Olympia teaches us how that operation was executed (Pl. XLI, 5). On a part of the circumference, the flutes are only indicated on straight planes. When these planes were cut on the entire circumference of the drum, making this a polygonal solid with as many sides as it must have vertical channels later. Here the drums at the time when the work was suspended, was ready to pass from the second to the third state. On a part of that surface the flutes are already cut in the concave curve characterizing them. In the great temples, t the architraves, triglyphs, drums and also other parts, represented considerable weights. How did the Greeks undertake to erect those heavy blocks, and in a general way to raise and set in place the stones composing their edifice? The s stones themselves inform us on this subject; many of them still bear the marks of the tools by means of which the workmen formerly handled them. One must have alreadn noted on several architectural members that we have reproduced, besides the holes that received the cramps are other holes not drilled for that purpose, and that could only serve for hoisting the stones (Pl. XL, 9, 20). Pl. XLII is intended to show the various procedures employed for this purpose.[1]

Note 1.p.519. Pl. XLII. 1; loop. 2; temple of Egina. Capital of the upper order of the cella. Garnier, pl. 17. 3; f fragment found on the Acropolis of Athens. 4; plan of the drum of a column of an Ionic column from Lesbos. 5; cornice of a treasury at Olympia. Durm, Fig.83. 6; architrave of the internal irder of the cella at Egina, after Garnier, pl. 17.

7; cornice of temple of Egina, after Garnier, pl. 17. 8, 9; substructure of cella of heraion of Olympia, and section of one course, after Durm, Fig. 63. 10; tongs. 11; course showing how the tongs takes hold of the stone. 12; entablature of temple of the Giants, after Cockerell. 13; courses of the propyleion at Athens. 14; stylobate of temple of Segeste. Hittorf, Pl. 5. 15; triglyph of temple of Concord at Agrigente, Durm, Fig. 63. 16; lewis. 17; architrave of temple R, Hittorf, pl. 47. 18; cornice of temple A, Hittorf, Pl. 16.

The simplest procedure was to place ropes around the stone to be raised, whether this was one of the drums of the column, or an entirely different element of construction, one of the stones of the wall; but so that while being hoisted, the stone should not risk becoming detached. There were left after roughing , prismatic projections, by which one might succeed in firmly fastening the rope. (Pl. XLII, 3, 13, 14). Still even with the aid of these projections, it was not impossible for this rope to slip sometimes on the block; then methods were sought to prevent all chance of accident, and several were found. That which seems to have been most frequently employed consisted in the use of what our masons call the loop (Pl. XLII, 1). A groove with two orifices is cut like a hole for a seton, in the block to be handled. It is in the form of a U or sometimes in a horseshoe;;its openings are quite near each other on a surface invisible in the construction (Pl. XLII, 2, 4, 6, 8, 9, 12, 15). The end of a rope is passed through it and knotted. Thus being traversed and held in this loop, the stone cannot escape that hold unless the rope breaks.

The same system was employed in a slightly different manner, when the sides of the stone must remain visible, for example on the capitals. Two holes are pierced in the abacus that join to form a canal. The solid portion left between the ends of the hole serves to hold the rope (Pl. XLII, 2). Elsewhere it is made similar for hoisting a block of the a architrave. (Pl. XLII, 6). The groove there has a little d different form, but the procedure is the same.

In the cornice of a temple of Selinonte the groove for t the rope is carried twice entirely around the tail of one of the blocks of the cornice (Fig. 240).

Vitruvius mentions iron tongs with points fitting into

holes made in the stone. One can represent that tool (Pl. XLII, 10) and take into account the manner in which it held the blocks by means of holes made in their sides (Pl. XLII, 11); but so far as we know, no fragments of architectore h have been found in the ruins of edifices, that bear the marks of the tool in question. It is not the same with another mode of suspension, very ingenious but more complex, that obtained by means of the tool known in our workyards under the name of lewis. This is a metal appliance composed of t two or three pieces, that together are wider at bottom than top; they are placed separately in a hole of the same shape sunk in the stone; once fixed in place, they are held more strongly as the block is heavier. The lewis may have a single or double dovetail; we have represented it in its more developed form (Pl. XLII, 16). It is further proved that this type was known to Greek constructors; in the cornice of temple A at Selinonte, the holes in which these wedges were inserted have sides of equal inclination.(Pl. XLII,13). Also with the lewis were raised in the same city the architraves of the temple.(Pl. XLII, 17). The part of the lewis projecting above the top of the stone, as with us must have a ring to which is attached the rope.

All these arrangements designed to allow one to seize and handle the blocks are evidence of the use of a series of q quite different machines; some of them with much less power, must very strongly resemble those used by our constructors. "Thus the use of the lewis simplifying hoisting by ropes assumes sets of pulleys fixed either to special masts or to the scaffolds, and the magnitude of the masses moved by the ancients authorizes the thought, that these pullies were u used in a manner to increase the effect while slowing the movement. Elsewhere the texts are formal; we find the principle of the pulleys explained in the theoretical works of the Greeks,[1] and Vitruvius in the first century B.C. indicated in his treatise the derrick with windlass or wheel, the various sorts of pulleys adapted to it, the combinations of derricks and capstans, shears, etc., the whole with such c clearness and precision, that in perusing the first chapters of his tenth book, one would believe that he was reading a modern treatise on hoisting machines.[2] It is useless to des-

to describe apparatus, that we daily see in action on our workyards."[3]

Note 1.p.523. Aristotle. Mechanics. XIX.

Note 2.p.523. Vitruvius. X, 1to5.

Note 3.p.523. Choisy. L'art de batir chez les Romains. p. 117-118. For more details on those machines, see Hittorf. Arch. Ant. VIII. Chap. IV, 1.

Men have sometimes believed that the architects made frequent use of inclined planes on which they hauled or pushed the blocks till they reached their places to be set; but t the study of the monuments does not confirm that hypothesis. There is indeed scarcely an edifice, where on examining the stones entering into its structore, we do not find either the projections or the holes that we have describeed; as a attested by both, these blocks were raised by the aid of r ropes; Pliny is the only one that mentions the inclined plane; this is with reference to an edifice of colossal dimensions, the temple of Artemis at Ephesus, where the column was about 59 ft. high.[1] It is possible that the machines w which usually corresponded to all needs, were unsuited to lift to such a height the loads that they had to raise; to relieve that embarrassment, they built there against the p portico one of those ramps with gentle inclination, to which Egypt seems to have had recourse sometimes, when it erected its gigantic pylons;[2] but this an exceptional case that the two architects of the temple, Thersiphron and Metagenes, t there resumed the method whose character was entirely primitive and barbaric. They had to struggle against very peculiar difficulties; we learn from Vitruvius that to bring f from the quarry to the site of the work the drums of their columns and the architraves of their entablatures, it was necessary for them to invent apparatus of entirely special arrangement, considering the enormous weight of those blocks

Note 1.p.524. Pliny. H. N. XXXVI. 21, 95.

Note 2.p.524. Histoire de l'Art. vol. I, p. 524-525.

Note 3.p.524. Vitruvius. X. 5.

11. Ceilings of the Portico and Cella.

We have demonstrated that in the peripteral temple, the wall of the cella and the external colonnade were independent of each other, at least in principle; but to create an edifice which had its visible unity, if was necessary to c

cover the void space separating those two parts of the whole, and to establish a certain connection between them. What f formed this connection was the ceiling of the portico and the double slopes of the roof. It is proper to first define the composition of the ceilings; we shall then determine that of the roof, with its carpentry and covering.

The ceiling of the portico and that of the front and rear pronaos had at the origin as the principal elements, beams perpendicular to the walls and leaving rectangular spaces between them (Pl. V, Fig. 1); one end was built into the e entablature of the portico and the other rested on the wall of the cella. In the great temple at Paestum are still seen, cut in the cornice course, rectangular recesses that received one end of the ceiling beams. These holes, according to the accurate measurements of the architect who has best studied this monument,[1] are indicated in our pls. V and VI. In our pl. V will be perceived the openings marked inside the portico, at the height of the bottom of the frieze, along the entire length of one of the lateral facades; they will be distinguished still better, because they are seen in front at the same height on the back of the triangular wall forming the pediment of the opisthodome. Further, the beams have already taken in the recesses the places reserved for them (Pl. V, Fig. 1); another drawing represents a more advanced stage of the work; one sees there an open ceiling, a sort of lattice that constitutes the elementary skeleton of the coffers.

Note 1.p.525. Labrouste. Temples de Paestum. Pls. IV, V, VI, VII, VIII.

In the primitive peripteral temple, such as we know it by the Heraion of Olympia, the entire ceiling, beams and coffers, was certainly made of wood. On the other hand, in the temples of the 5 th century, these coffers and beams are of marble; but even them, in the arrangement of the members w whose combination forms this covering, one recognizes the forms and arrangement suited to wood, which could have originated only from carpentry. The stone beams are faithful copies of oak beams, and in the panels which close and finish the spaces left between them, one recognizes not to be mistaken the imitation of a work in carpentry (Pl. VII, Figs

5, 6). In the wooden ceilings, by means of beams joined at right angles was covered the spaces between the main beams (pl. VII, Fig. 3). These spaces were divided into square p panels, that formed superposed frames, recessed one above the other. These panels we term coffers or cassions. The upper part of each coffer is terminated by a slab entirely c covering it (pl. VII, Fig. 4). When the constructor substituted stone for wood in that part of the edifice, he docilely reproduced all the features of the models that he had u under his eyes; thus the architect, when he undertakes today to restore these ceilings, can at pleasure require from either the material for covering his portico. Thus in his beautiful restoration of the temple of Paestum, Labrouste has accepted the hypothesis of a stone ceiling, while other architects and we ourselves have believed it necessary to suppose all that covering executed with carpentry. Yet the principles that we have used are just those employed by our predecessor, and thaces that wall has retained of the insertion of the beams, that formerly sustained the entire arrangement of the coffers.

If we have adopted here this system, as we had taken it in the case when we had to restore some one of the old temples of Sicily, this is because those stone coffers are in place neither at Paestum nor in any edifice in question, a and that further no more at Selinonte that at Paestum, one has found the least fragment among the rubbish of all kinds that covers the ground around the monuments. The proof is certainly negative; but it no less has a great value. It further results from the plan drawn by Labrouste, or rather from that imposed on him by the gains cut in the entablatore, that certain stone beams which we restored were badly suited to the habits and requirements of stone construction. That is notably observed for the two beams on the principal facade opposite the second and fifth columns, that are directed toward the antes of the pronaos. They do not seek their support on the entablature of the pronaos; they intersect the beams of the side portico where it covers the space, an arrangement very well explained with a halved timber, b but which one can no longer understand with the use of stone (pl. VI, Fig. 1).

Fig. 3 of plate VII presents the entirety of that arrangement of the restored ceiling of Paestum, and Fig. 4 gives its details. The form of the spaces to be covered being given, the properties of the material and the methods that it suggests to the workmen, the coffees reestablish as of themselves, just as they are here arranged. Their details are given in Fig. 4 at a larger scale, but only in a rough state, as necessary here for a conjectural restoration. In this edifice the gains into which entered the ends of the ceiling beams have an opening of 1.38 × 2.76 ft. It is to be assumed that those beams were composed of two superposed o blocks each 1.38 × 1.38 ft. The cabling that divides into two equal parts the marble beams of the temple of Theseus is perhaps only a survival of that arrangement presented by the wooden beams in the ceilings of ancient temples (Pl.VII, Fig. 6). It will be only in Attica, we believe, that in the 5 th century men had begun in the ceilings to replace wood by marble. When the temple of Egina was restored, men did not hesitate to restore there the beams and coffers of stone or marble; yet the ruins do not offer the least vestige of these elements (pl. XLIII).[1] The temple of Theseus is t the most ancient edifice that possesses a marble ceiling; but it suffices to study our plates VI and VII to be convinced that the change in material has caused no change in the forms. Plate VI, Fig. 2, shows the framework of the beams and coffers, such as the spectator would see them if placed above the building; the same ceilings appear in plate VII just as you would see them from beneath, by raising the eyes when walking under the portico. Figs. 5 and 6 represent a part of the ceiling and the marble coffers of the temple of Theseus; one would have no difficulty to recover there the characteristic arrangements of the wooden ceiling that we have restored according to assumed principles in t temple of Paestum.

Note 1.p.527. Garnier. Le temple de Jupiter Panhellenios a Egine. 1884, p. 32.

One will notice the very narrow rebates by which are connected the planes superposed in these coffers. Everything leads one to believe, that even in the most ancient temples, color served to increase the effect of these mouldings.

Executed in carpentry in the earliest edifices, the later with each feature translated into marble, this type of covering is that which one will find in all temples of the archaic period, if they have retained their ceilings. In the temple of Nemesis at Rhamnus (Fig. 241), and in the temple of Theseus (Fig. 242), this system of beams and of coffers prevails nearly the same everywhere, over the vestibules a and the entire portico, i.e., entirely around the temple. One does not know temples in which the ceilings of the front and rear pronaos are not arranged on this plan; but there are some in which the arrangement varies from the two pronaos to the portico; over the latter are no beams separated by coffers, but a simple slab, in which are cut panels in the form of coffers. It is thus on the Parthenon (Fig. 243) and at Bassae (Fig. 244 and Pl. VII, Fig. 7). There is a s simplification that is explained by the change in material, but which allows to be clearly discerned the imitation of wooden ceilings.

If one considers the height of the floor of an edifice, that is arranged in three different planes, it is easy to understand that it should be the same for the ceilings.

The pronaos and the posticum have a little greater height than the portico, and a little less than the cella. The ceiling of the portico is again sufficiently well preserved in several temples; in some places are some remains of that of the pronaos; but as for the ceiling of the cella, nothing remains in any Greek temple, neither in place nor even in the state of ruins found among the rubbish of ruined edifices. One cannot cite an architectural fragment to which may be attributed this purpose, from its form and its decoration.

Whether the interior was narrow or broad, the ceilings of all cellas must have been built of wood; they presented very simple arrangements, which with more richness in the decoration, must be analogous to those of the ceilings of the portico (Pl. VI, Fig. 2). This was a variation of the mode of construction called by extension. All this wood offered a ready prey to fire; there are scarcely any rather celebrated Grecian temples, which we do not know were burned several times.

Of the entire span in the temples that had no internal c

colonnades, in the others the ceiling was divided into three longitudinal parts corresponding to the three aisles of the temple. That of the middle must have been the most sumptuously decorated; the beams might be enclosed within thin facings of terra cotta or of metal, inlaying them in bronze, gold and ivory; but it is probable that men were most freqeunlty contented to trace with the brush varied ornaments on the surfaces of the beams, as well as on the ground of the frames of the coffers. With the regularity of its symmetrical compartments, its luxurious ornamentation, the ceiling thus formed a sort of ample and rich horizontal tapestry interposed between the spectator and the roof of the edifice, that concealed from the eyes the carpentry that it supported.

12. Carpentry of the Roof.

If in the stone ceilings of more than one temple, one has faithful copies of the wooden ceilings that preceded them, no temple has retained its roof. The principal element of that was a framework that formed a system independent of t the carpentry of the ceilings, with which it had no point of contact.

This carpentry of the roof has disappeared everywhere; o but it has also left on the walls of certain edifices traces, that permit its restoration. For example, this is the case for the temple of Poseidon at Paestum, that by its state of preservation represents today better than any other the type of temples with internal colonnades. Above holes that mark the places of the supports of the ceiling, one sees at one place on the inclined courses that form the copings of the pediment of the cella, the rectangular holes that received one end of the purlines and ridge, and on the other hand, on the sides at the top of the entablatures are holes in which were inserted the rafters. According to the dimensions of these gains and the positions that they occupy, one measures the dimensions and divines the arrangement of the principal elements of the roof. By the aid of this data are restored one of these frameworks with almost entire certainty, which does not differ much from those of other edifices of the same kind. We shall describe it as presented by our restoration (Pl. VI, Fig. 3, and Figs. 245, 246).

There is not to be sought a number of members correspond-

composing our carpentry, even the least complicated, principals, kingpost, tiebeam and struts. The carpentry of Paestum consists of purlins, a ridge and rafters; to these members are added over the cella, beams or false tiebeams, which have the function of supporting the ridge. Two arrangements are to be distinguished in this carpentry. At the two ends before and behind the cella, the purlins and ridge extended from wall to wall (Fig. 245). In these parts of the edifice, these elements alone with the rafters compose the carpentry; but this very simple system was no longer applicable to the portion of the roof that rose over the cella. Above its two secondary aisles, rafters sufficed to cover the narrow space between the two walls; but it would have been impossible to find a ridge beam sufficiently long to span the interval represented by the length of the central aisle. This ridge must then be composed of several timbers, that must be supported below the joints by means of cross beams resting on the small walls placed above the second s story of the internal order (Fig. 246). Purlins and false tiebeams form the resisting framework of the carpentry, the skeleton on which extend the rafters. Those are divided into three series on each slope. The first extends from the ridge to the little wall built over the internal columns, the second from the wall of the cella to the highest course of the entablature. Regarded in its constrction, this roof allows to be recognized all the elements of the carpentry, which in the primitive age must support the terrace of the great megaron (Figs. 177, 178). The system is scarcely modified by the conditions that imposed the establishment of a roof with two slightly inclined slopes.

Long after the end of the archaic period, the Greek constructor continued to use this system, which is of extreme simplicity; in effect, its principle is that of the arrangement of the roof of the arsenal, that the celebrated architect Philo built at the Piraeus between the years 346 and 328. There are only insignificant differences between the carpentry restored at Paestum, by calling the monument as evidence of its ancient state, and that restored from the arsenal of Philo from the very precise indications of the inscription containing the specifications of the works.[1]

Here are the remarks on this point by the learned engineer to whom is due this last restoration; they apply just as w well to both of the two corresponding works:- "Nothing is simpler than this construction; but nothing differs more c completely from what is practised today. Among us the tie-beam is essentially a member subject to tension, a tie. H Here the tiebeam appears as a supporting member, and there is no trace of the idea of a truss, i.e., of a combining in which the weight of the roof is resolved into a tensile stress; this fundamental idea did not present itself to the mind of the constructor. The entire roof is only a series of timbers resting on each other, whose weights act vertically without ever being converted into tensions; on the whole, that marks a very primitive phase in the history of the art of carpentry."

Note 1.p.533. A. Choisy. Etudes epigraphiques sur l'architecture grecque. 1884. Premiere etude; L'arsenal do Piree, according to the specifications of the works, p. 21.

Here the beams had to oppose flexure; to not yield, it w was necessary for them to be of great dimensions, and the width of the gains permits the statement that the purlins satisfied that condition.[2] They were not all of the same size. The dimensions varied from 2.0 to 2.36 ft. Those were great timbers; but still these dimensions were not exceptional and beyond customary ones. In the carpentry of the arsenal of the Piraeus, the same purlins were 2.53 × 2.33 ft.

As for the rafters and judging from the gains made for t them, they had dimensions of 8.66 × 8.66 ins. The spaces b between them were 21.65 ins. The tiles extended from rafter to rafter. Thus they were about 26.38 ins. wide. Were battens interposed between them and the rafters? One of the best arranged existed in the roof of the arsenal of the Piraeus. There the battens were covered by a layer or coatinm on which were directly placed the tiles, that also had the advantage of preventing the heating of the carpentry.[3] This information is given to us for the building of Philo. In the temple of Paestum the stone has retained traces only of the principal members of the carpentry, of those with one end supported on the wall.

Note 2.p.533. Labrouste. Temples de Paestum. Pl. IV. Sec-

Section on A B. Actual condition.

Note 3.p.533. Choisy. Etudes epigraphiques. p. 22.

The system whose principle we have explained must have b been employed with slight modifications required by the dimensions of the edifice, in all the temples, as in the enclosure of Olympia at the Heraion and the temple of Zeus, where were as many points of support as at Paestum; but in temples in which the internal order was wanting and as in certain temples in Sicily, where the cella attained widths of 32.8 to 36.0 ft., the problem was no longer suited by the same solution. The constructor must have solved it by erecting a truss; but according to all appearance, this truss was a very simple arrangement. A skilful artisan, if he properly selects his timbers and frames them with a certain precaution, can design carpentry of great span, without kingpost or struts, with two principals and a tiebeam. There are no other timbers in the carpentry on which rests the roof of the cathedral of messina, and yet at the base of the triangle the aisle is 45.9 ft. wide.[1] It is the same in the cathedral of Monreale, where the width is 46.9 ft. in the clear. (Fig. 247). Perhaps it is necessary to see in the type of truss applied to these buildingu a legacy from the past, t the effect of habit and of local traditions. These procedures go back even to architects contemporaries of Empedocles; they transmitted them to their successors, and their practices came from generation to generation until the masters, who built for the Norman princes so many beautiful edifices in the 11 th century of our era.

Note 1.p.534. Charpente de la cathedrale de Messine, drawn by Moret. Pl. III. GE41. A certain role was reserved for metal in the mode of attachement of the timbers of this carpentry; perhaps the ancients did as much.

In the 7 th and 6 th centuries, tiles properly composed the roofing of temples. Byzes of Naxos, it is said, in the first half of the 6 th century gave the example of sawing into form of tiles the coarse-grained marble, that was supplied by the quarries of his native city.[2] On the other hand, there were found on the Acropolis of Athens marble slabs, that seemed to have performed the part of an edifice preceding the Median wars, an edifice to which also belonged a

cornice of the same material, some fragments of which remain;[1] but the products of this industry, special at Naxos, at that epoch had only been utilized in that island, in the neighboring island and the cities like Athens, which maintained close relations with the Cyclades. In Attica itself that practice only became general in the 5 th century, that men adopted the habit of substituting marble for terra cotta in the covering of the temple; one would be quite naturally led to that when the temple was built of Pentelican marble. Then everywhere shone the whiteness of the crystalline stone from the ridge of the edifice to the widest step of the substructure. Until that time, clay had been devoted to that use, clay that lent itself so well by its low cost and by the facility it offers to moulding; men will long remain contented with it, perhaps always. Yet it seems that where marble is wanting, men sometimes employed in a spirit of e emulation slabs of stone instead of tiles;[2] but this has o only been an exception there, the covering of marble or stone was only a copy of the covering in tiles, that was itself born with the peripteral temple, and whose arrangement was continued from the beginning in a manner to guarantee an effective protection to the sanctuary, the vestibules a and the portico, over which extended the shelter of its inclined terraces.

Note 2.p.534. Pausanias. V. 10, 3.

Note 1.p.535. Lepsius. Griechische Marmorstudien. p. 125. The fragments of the cornice to which we allude are those, a specimen of which is given in the Antike Denkmäler. Vol. I, pl. 50, Fig. E.

Note 2.p.535. Hittorf found in the ruins of temple S of Selinonte slabs of stone, that had all the appearance of tiles. (Arch. ant. etc. p. 560).

The principal element of this covering is flat tiles with borders, which rest on the rafters, either directly or by the mediation of battens (Pl. XLIV, 3, 4, 14; Pl. XLV, A, B, C, D).[3] Very heavy, they could remain in place by their own weight; also sometimes to fasten them better still, they would be fixed to the rafters by nails. In the direction of the slope of the roof, these tiles were so placed that the lower edges of those in the second row covered the top edges of those of the first row, and so on up to the ridge. The

water ran down that inclined surface; but there were joints in the direction of the slope by which the rain might have pene.rated the roof, if they had not been covered by tiles of a special form. (Pl. XLIV, 1, 2, 10, 11).[1] These were most frequently round, or at least we find them shaped thus on the most ancient edifices, such as the Heraion, treasury of Gela, temple C of Selinonte (pl. VII, 1, 2); they are also found triangular, for example on the temple of Egina (PL. VII, 7), at Metaponte and at Selinonte, where they are elegantly decorated on their upper surfaces and their sides. (Pl. XLV).

Note 3.p.535. On the different forms presented by these tiles and their different arrangements, according to the t time and the country, see the obseevations of Gräber in the Programme often cited, Ueber die verwendung von Terrakotten im Geison und Dache griechischer Bauwerke, p. 14-22.

Note 1.p.536. Pl. XLIV. 1; 1, 2, 3, 4, temple R at Selinonte. 1, 2, covering tile seen from below and above; 3, 4, flat tile seen from above and below. After Hittorf, pl. 46. 5; elevation of ridge tiles found at Selinonte. 6; longitudinal section of the same tile. 7; transverse section of r ridge tile. 8; side view of same tile. 9; perspective view of the same tile. Notizie degli scavi, 1884. pl. VI. 10; cover tile with knob viewed from beneath. 11; cross section of same tile. Type of Greece proper. Gräber, Ueb. die verw. p. 18. 12; temple R, perspective profile of cymatium of a pediment. 13; perspective of assemblage of these tiles seen from the reara After Hittorf. pl. 46. 14; Selinonte. Flat tile, perspective of underside. Notizie. 1884, pl. 6. 15; Temple of Apollo at Bassae. Assemblage of ridge tiles, of cover tiles and of the cymatium of the pediment, seen from the rear. 16; section of the assemblage of the cymatium. 17; section and assemblage of tiles. 18; plan of these tiles. 19; plan of ridge tile, after Blouet, Exp. de Moree, II, pl.8

Note 2.p.536. On the very old temple of Tiryns, of which only very few remains have been found, the antefixas being triangular, the covering tiles must present the same arrangement. (Schliemann and Dörpfeld, Tirynthe, p. 276, Fig. 125, tuiles ornees).

The ridge tiles are also covering tiles; they have the f

form of half cylinders beneath which penetrate in pairs the upper edges of the last row of tiles, on each slope(Pl. XLIV, 5,6,7,8,9,10). What distinguishes them is, that they most frequently have a projecting ornament, whose repetition forms a crest that is outlined against the skn. This ornament is ordinarily a sort of plamatium (Pl. VII, 1).

Along the openings of the pediment is always a row of tiles that present a quite peculiar arrangement (Pl. VII, 1). These tiles rise almost vertically at their outer edges and their relief furnishes the cornice with its cymatium, the crown of the cornice. Behind this projection, the tile is concave; it is hollowed into a gutter, that ends at the spout arranged at the two ends of the facade (Pl. XLIV, 12,13, 14,15,16). In certain temples (S and R of Selinonte), the gutter appears to have extended entirely around the edifice. On others, the long sides have a gutter that does not exactly reproduce that of the pediment, or indeed they have no gutter at all. The Parthenon is in this case. Then the top of the cornice serves to support the antefixas: thus is termed in imitation of Roman architects the slab of terra cotta in which terminates the lower ends of the lowest covering tiles (Pl. VIII, 2). Whether they are of clay or marble, these antefixas form a secondary crest parallel to that of the ridge. The eye of the spectator stops on that line and on its symmetrical cut-outs; that limits the planes of the edifice by its elegant and firm outline.

Nowhere is the happy effect that must be produced by this border, more sensible than in a restoration of the cornice of temple C of Selinonte, such as can be reestablished by recent researches, that have revealed the importance of the part that terra cotta played in the edifices of Sicily (Pl. II; Pl. VIII). On a bent slab of terra cotta, a sort of gutter perforated in its decorated face, rested the lower ends of the tiles. The water from the roof escaped by certain openings of irregular form but symmetrically spaced, that even determined the ornamental motives. As we have already indicated, the cornice proper must there be surmounted by a course that constituted a second facia, an upper facia, where the stone was further completely concealed by a rich facing of terra cotta. With the cymatium and palmatiums that

terminated it, the latter formed a polychrome decoration of the most beautiful character.

The Greek constructor has then made proof of marvellous ingenuity in the composition of his roof; he has spared nothing that this roof of tiles should fulfil a twofold purpose, serving both as a protection and an ornament to the building on which he placed it. This end was attained at t the first time. The roofing of the Heraion must have been much simpler and plainer in appearance than that of the temples of Sicily. Thus the flat tiles placed on the rafters had no tuned-up edges. They were slightly concave (Pl. XLV, A, P). The remainder of the system was doubtless pleasing, less complicated and less ornate than in the roofings, of which we have given restorations. Having once entered that path, the progress due to the skill of the artists, that m modeled, and burned the colored clays, could not fail to be very rapid. No other architect has created monuments whose covering may be a work of art in all the force of the term, or while opposing an impassable barrier to leaks of the v water, has so efficiently contributed to the effect and the expression of the edifice.

What no less aided in giving to the roof that beautiful character was the use, that the architect made of the antefixas and acroterias. The antefixas are the appendages in which terminate the last tiles of a row, those next to space.[1] (Pl. VII, 2; Pl. XLV, treasury of Megara). Rising vertically, these appendages accompany and thus extend the ascending lines of the edifice; in the oldest edifices they are bordered either by a triangular outline (Pl. XLV, Tiryns), or by rounded forms in the later, that are sometimes limited by a continuous curve (Pl. XLV, Egina),[1] sometimes by the wavy lines of scrolls and the symmetrical branches of a tall palmatium (Pl. XLV, 2, Egina). The last type has an elegance entirely different from the preceding; it lends itself to much more varied arrangements. One of the happiest is that presented on one of the longer sides by the cymatium of temple C of Selinonte (Pl. VII, 2); a row of lotus flowers alternately upright and inverted above or below a palmatium, there forms the row of antefixas. On other tiles that seem to have belonged to the cresting of the roof, the simpler

lotus flower is outlined by a slight relief (Pl. XLV, temple C).

Note 1.p.540. Antefixa from an ancient Dorci temple at Tiryns. Schliemann. Tirynthe. Fig. 123. Ridge tile at templeC. Hittorf. pl. 25. Treasury of Megara at Olympia. Olympia, pl. 37. Egina, antefixa seen in front and back. Terra cotta. B Blouet, I, pl. 54. Egina, another antefixae of marble. Same work. Decorated tiles. Metaponte. De Luynes & Debacq. Pl. 8. Temple R. Hittorf. Pl. 48.

Properly speaking, the antefixas are only the projecting borders of the extreme covering tiles. On the contrary, the acroterias are independent pieces of large dimensions, that are placed after the erection of the rood, on the apex of the angles of the roof. (Pl. VII,A,B,C). They were of terra cottawhere the roof was made of tiles, of marble where marble slabs formed the covering. The acroterias played a useful part in the constroction. Set in places where the materials were particularly exposed to sliding, they prevented that danger by their weight,even,where sufficient provision had not been made for the adherence and solidity of the masonry by the special cutting of the joints by the strength or number of the cramps. At the same time they contributed very usefully to the effect of the whole. By their relief they attracted attention to the points where met the principal lines of the edifice; without intersecting those lines or affecting the harmony, they occupied the angles and raised the pediment. Thus they elevated and animated the roof by diversifying its appearance.

Clay at first served to furnish the elements of this decoration. The most ancient acroteria known is the great piece of painted terra cotta, that surmounted the pediment of the Heraion of Olympia; it has been possible to put together t the numerous fragments found in the excavations, and to restore it almost entirely. It had the form of an enormous disk 7.4 ft. in diameter; this disk fitted the apex of the pediment by an opening corresponding to the inclination of the pediment; we show it in elevation and section to make intelligible the arrangement, by means of which they succeeded in fabricating it without deformation, and in fixing it solidly on the ridge of the roof (Pl. XLVI).[1] The motives that

ornament the surface are nearly all borrowed from the repertory of the geometrical style; one can even say that all are It has even been believed that leaves are recognized in the fourth row from the centre; but the forms to whice it is p proposed to give that name offer nonly a very distant analogy to those characterzing the plant kingdoma What this decoration especially recalls by the concentric zones into whit is divided, and from which extend and stop the different motives, are certain disks of clay or of metal, that passed under our eyes, when we were studying the art in which we saw the contribution of the Dorian tribes (Figs. 17, 55, 77, 73). The designs were first stamped with very prominent hollows and reliefs in the moist clay; then color accented the lines. On a ground of blackish brown, the motives are detached in white or in red approaching violet.

Note 1.p.543. Pl. XLVI. The acroteria of the Heraion, elevation and section. Bötticher. Olympia, pl. 17. A, B; tiles of the Heraion. Gräber. Pl. 16. C, D; covering tiles, Sicilian types. The same, pl. 17. Acroteria of a pediment of painted marble. Ant. Denk. Vol. I, pl. 50. Another acroteria of the same material and taken from the same edifice. Same.

If the constroction of such a great slab of clay is evidence of rare technical skill in the potter, the general form of the piece is heavy; the design and the scale of tones remain very poor there. Then this work,must be dated from the 7 th centoury at latest. With the two other acroterias represented on the same plate, one feels himself in presence of a far more advanced art. Found in the excavations on the A Acropolis of Athens, they are both of Pentelican marble; they come from the crown of the same edifice, which was p probably built about the end of the 6 th century by Pisistratus oh his sons, and according to the dimensions of the fragments collected, must have been about 49.2 ft. long by 36.0 ft. wide.[1] The two parts reproduced here formed portions of the inclined cyma of a pediment,,which is explained by the small dimensions of this moulding; they terminated it below at the angles of the tympanum; it is assumed that the largest of the two belonged to the pediment of the principal facade, and the other to that of the rear facade. The entire arrangement is here happier in effect than at the

Heraion; there is truly elegance in the movement of this ample volute, that is rounded above the gutter and projects so boldly into space. It is the same with the ornamental motives that decorate the cymatium and tne volute; if on it are only chevrons and checkers that remain within the principles of purely linear design, on the cymatium the open f flower of the lotus alternates with the palmatium. The red and blue colors are lively and gay.

Note 1.p.544. Wiegand in Antike denkmäler. I. p. 39.

In spite of the differences already mentioned, the marble disks of the acroterias of the Acropolis again recall the clay disk of the Heraion; but on the temple of Egina, that seems to date from the first years of the 5 th century, the architect has already taken an entirely different method f for these members. Already for some time, he had called on the figure to fill the surfaces of the pediment and of the metopes; what was more natural than to use it also to decorate the angles of the roof? According to some remains that have been recovered, it has been possible to restore the acroteria, which surmounted the pediment at Egina. Executed in the same marble as the statues of that pediment, it consisted of two female figures, erect and draped, between whom rose a palmatium of beautiful design, where broad volutes were scrolled in contrary curves. Behind, the palmatium was supported by a rampant lion (Pl. VII, A, B). At the two angles of the tympanum the motive was simpler, but of the same kind; a winged griffin rose above the lion's head, that formed a spout at the end of the gutter (Pl. VII, C). The acroterias will henceforth be more or less similar to those just described; by the choice of the theme they belong to the art of the statuary; it will then be from the sculptor charged with the ornamentation of the temple, that the architect w will require them on all edifices of some importance.

13. Mouldings.

In its most ancient monuments, Doric architectore rarely employs to model and diveesify the vertical surfaces of its edifices, other elements than rectangular mouldings in the form of fillets, whose importance varies according as they have more or less relief and height. Besides these, it does not really possess but a single moulding of curved section

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Note 1.p.544. [illegible]

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peculiar to it; we speak of that moulding termed crowbeak, that always surmounts the facia of the cornice (Pl. XXXIII, 2). In the 5 th century that moulding also appeared under the portico in the profile of the ante (Pl. XXII, 5, Fig. 232).

The crowbeak, fillets and astragals may occupy different places on the edifice. It is not the same with the cymatium By its dimensions, that is the most is the most important of all mouldings comprised in Doric forms. We have already indicated the effect; we have shown how it sometimes exists only on the facade, while at others it extends entirely around the edifice. Whatever method the architect adopted in this matter, what defines it is that modeled at first in c clay and later cut in stone, it always forms the terminal part of the entablature, the crown of the cornice. The curves that outline its profile vary from one edifice to anoth er. On the treasury of Gela and on the temple of Metaponte, the cymatiums were of terra cotta. On the first of those ed ifices, the profile of the cymatium forms a flat hollow; it approaches what we term the cavetto (Pl. VIII); at Metapont below a square fillet is a quarter round formed by a small curve to a vertical facia from which is detached the lion's head serving for the discharge of water (Pl. IX). There is the same diversity on edifices where the cymatium is made of stone, like the rest of the building. At Egina the cymatium has the form of a very flat reverse ogee. On the templ of Zeus at Olympia, we find two quarter rounds that join an thus form two collars, at the Parthenon is a flattened quar ter round, at Bassae an ogee, etc.

During the first time of its development, Doric architect ure does not seem to have known mouldings carved with the chisel; it had recourse to painting, when it desired to giv some richness to the appearance of its mouldings. Thus at the temple of Egina. In terra cotta were certain ornaments first executed in relief; one sees eggs and beads appear in the facings of Metaponte (Pl. IX) and the beads in a cymatium of Selinonte, that must be of nearly the same time.[1] T These beads and eggs are rarely seen carved in stone before the middle of the 5 th century. The oldest example that can becited is apparently that furnished by the temple of Cada-

Cadacchio in the island of Corcyra. That edifice is now destroyed and has not been entirely uncovered; only some elements of it have been determined, but which present a very peculiar character, and that allow a very distant date to be assigned to the monument.[2] There are on the cornice eggs as well as two astragals with beads and disks (Figs. 248, 249); but these ornaments there have neither entirely the same form nor the same proportion as on the temples of the 5 th century. The beads are much larger there with relation to the eggs, and than they will be later; the eggs themselves are narrower and more elongated. The ornamentist is then in the period of essays and experiments. For example, see this motive of eggs superposed on the pearl bead, a motive that one will frequently see reappear in the decoration of the edifices of the succeeding age. The artist has already invented and composed their entirety, but he has not known yet how to coordinate the elements and to find for each of them the most elegant and happy form.

Note 1.p.548. Dörpfeld. Ueber die Verw. etc. Pl. II, 3.

Note 2.p.548. What remains of this temple has been described and drawn by W. Railton in Antiquities of Athens and o other places in Greece and Sicily. Vol. VI, Pl. IV, Figs.4,5.

Such simple mouldings of the most ancient Doric architecture do not seem to have suffered the direct influence of a foreign art; it is possible that certain secondary forms, such as eggs and beads, may have been suggested by oriental models; yet in Egypt and Assyria they have an outline sensibly differing from that, which they have taken under the o chisel of the Grecian ornamentist. In the same order of ideas, there are also to be mentioned rare monuments on which the profile of a crowning moulding recalls that of the Egyptian cavetto. This is recognized on two fragments of painted terra cotta facings contained in the musesms of Palermo and of Syracuse;[1] The same as.ragal surmounted by an ample cavetto; but in these fragments of Sicilian cornices, there is below the astragal a facia projecting at the bottom, an arrangement found in Egypt only in the band terminating all edifices. The members where one believes may be perceived this influence of an exotic type are further of small dimensions. This same form reappears with the astragal and the

terminal fillet, perhaps yet more characteristic, on the c crown of the little s.ructure discovered at Selinonte (Fig. 250); but the cavetto there has only a very weak development. On the contrary, it describes a beautiful curve on an Attic funerary stele, which must date from the end of the 6 th century (Fig. 251). There if the as.ragal is lacking and if it is replaced by a light triple fillet, the cabling that decorates the hollow of the cavetto reproduces one of the special peculiarities of the Egyptian moulding, and the wide band that surmounts the whole adds to the resemblance. It is difficult to see in this the effect of a simple chance; one would rather be tempted to explain it by a mode of direct imitation. The artist charged with cutting that tombstone would have had under his eyes one of those little objects made in Egypt or copied from Egyptian types, that P Phoenician commerce distributed in Greece, objects that repeated, whilh simplifying and reducing them, the motives t that on the banks of the Nile had been created by the greater arts for the ornamentation of great religious and civil edifices. Without servilely copying its model, the entirety of the form had been borrowed from that.

Note 1.p.549. Dörpfeld. Ueber die verw. etc. Pl. II, 5, 6.

One may be astonished that the example so given was not followed more frequently. By the bold hollow of its outline, this form marvellously suited the ornamented stele. Projecting outside with the high band terminating it, the upper p part of the slab played the part of a sort of hood adapted to protect from storms the image painted or carved beneath it on the rectangular panel; within the shadow, it emphasized by contrast that image presented in full light; finally, it also had the advantage of presenting to the eye something of the appearance of a capital and of its robust vigor.

14. General Proportions of Doric Temples.

Men have frequently attempted to prove that in Grecian a architecture the proportions were determined by some sort of general constructions.

Whatever may be said, the proportions of a good number of temples correspond imperfectly to the drawings, that have been imagined.[1]

Note 1.p.551. This kind of operations have a value only

if their results are verified by calculation. Drawings at small scale, even if carefully executed and apparently very accurate, almost always lead to erroneous solutions.

General Proportions of Plans.

We have already drawn at the same scale the plans of the principal temples (Pls. XIV, XV, XVI, XVII, XVIII). One can thus obtain a clear idea of the extreme diversity of their dimensions.

We now desire to make apparent the differences in their proportions. On the other hand, for that it is necessary f for us to draw those plans at different scales, but taking care rigorously to give them the same width. In the parallel that we are to establish, this constant width will be taken between the axes of the lines of columns along the sides of the temples. The capital importance of these axes in tracing the proportions, in plan as well as in elevation, sufficiently justifies our choice.

There it is now understood, and we shall not repeat this explanation, that in all the diagrams of plates A, B and C (XLVII, XLVIII, XLIX), the dimensions in width are related to the lines that we have just indicated.[1]

Note 1.p.552. Consequently the lengths are comprised between the axes of the columns on the front and rear facades.

In Table A are the perimeters of all temples of which we have been able to procure accurate measurements. Each rectangle is constructed from a single measurement. In no case have we established a mean between the different measurements given by the architects that have measured the same temple.

All these rectangles have been reduced to the same width A B and arranged in the order of the extent of their length. By this means it is easy to see at the first glance the differences in proportions that distinguish them.[2]

Note 2.p.552. See Note on p. 569.

Now let us consider the base A B. (Pl. XLVII, 1). If on that base we superpose three squares having sides A B, we shall at once observe that the smallest temple of the series that we have formed slightly exceeds the lower side of the third square (2), and that the temple with the largest proportions has not quite reached the upper side of the same

square (27). Those figures then represent the extreme limits between which the lengths of the temples were comprised during the entire duration of Grecian architecture.

Table A affords opportunity for other observations. A Greek temple can have both great dimensions and small proportions. The converse proposition is equally true. This remark may surprise persons that freely confuse these two terms; our two diagrams will aid them to understand how they differ. for example, let us consider the temple of the Giants at Agrigente, which is truly a giant among temples; it has more than 328 ft. of length and more than 53,820 sq. ft. of area. (XLVII, 6). In spite of such enormous dimensions, this edifice has small proportions, while other temples with a length less than 98 ft. and an area of 3,230 sq. ft. have greater proportions than that colossal monument (7, 8).

This diagram also shows that the temples with a hypostyle cella do not show any similarity of relations between them. Among these edifices are some of small, average and great proportions, for example the temple of Egina (6), the temple of Zeus at Olympia (16), and the Heraion within the same enclosure (25). Temple R at Selinonte, that attains in Table A the largest proportions, has a cell without columns (27).

After this let us arrange a chronological series of the proportions just recognized, in the upper diagram of Table B. (Pl. XLVIII). The constant width of the temples is A B. As for the relations existing between the dimensions of t these edifices, they are expressed in figures and are graphically indicated by parallel lines or ordinates.

The movement of the lines joining the upper ends of those lines shows that the proportions are not developed in any regular order, and exhibits their fluctuations in the course of the time.

Another diagram on the lower part of plate B relates to the dimensions of width and length of temples, likewise in the order of time.[1] In the last the variations produced by the lengths of the ordinates differ considerably from those of the upper diagram. Comparisons are thus easily established; the contrast is much more marked between the differences of dimensions than between the proportions.

Note 1.p.555. The figures are given in metres of 3.28 ft. e

In brief, the laws resulting from the tables just analyzed are those having as results the dissimilarity of proportions in all the plans of temples, and their irregular succession in the course of time.

These being recognized, there should no longer be a question of connecting these plans of the same type of outline; but could one in each case determine the perimeter by a special construction? Nothing absolutely proves that it may not have been so.

It indeed results from a theorem of M. Hermite, that two lengths taken at random may be connected by a great number of geometrical constructions of simple character. One conceives that in such conditions it may be difficult, if not impossible, to recognize those employed by the Greeks.[1]

Note 1.p.556. Also consult on this subject the researches of Lejeune-Dirichlet. Werke, vol. I, p. 634.

However, research in this sort of outlines is not deprived of all utility; it sometimes attracts attention to peculiarities, that otherwise might remain unperceived. We present below some constructions of this kind, that we believe are unpublished. Fig. 252, 1 represents the plan of the temple of Qeus at Olympia. Half the diagonal of the base is transferred to a point on one side of the perimeter. By a parallel to the base the length so obtained is transferred to t the other diagonal at 2. This point is the centre of an arc, which by its intersection with the horizontal axis of the plan, fixes the position of a secondary square equal to that of the base, and determines the length of the sides of the edifices with an error of about 1.18 ins. for a length of 202.44 ft.

A slightly different drawing is applied to the temple of concord at Agrigente (Fig. 252, 11). The transverse axis of the temple is obtained by the arc with centre at the point 2. The error is 0.79 in. for a length of 124.2 ft.

For the temple of Corinth (Fig. 252,iii), the operation is very elementary. It suffices to let fall on the longitudinal axis of the plan a diagonal of the square of the base to find the transverse axis. For a length of 169.2 ft., the error does not reach 0.79 in.

The temple of concord is again represented in Fig. 252,iv).

A drawing different from that in Fig. 252,ii, and so easily intelligible as to require no explanation, gives the length of the sides to .0079 in.

Without executing as we have done, our operations on the surfaces of the plans themselves, we can obtain results as accurate by another kind of drawings. Fig. 252, v represents the perimeter of the Parthenon. If one constructs on the l line 1 A′ the two dotted squares, and prolongs both ways the diagonal common to these two figures, it will suffice on t the one hand to extend outside the diagonal of the little square to determine the point A, and on the other hand to project the centre of that little square on A′. 2 to obtain the point B by means of a transfer with 2 taken as centre. A B is the[1] length of the temple, and the error is less than 1.18 ins.

Note 1.p.557. We have drawn the perimeter of the Parthenon according to the measurements of Iwanoff (Architektonischen Studien, Part I, pl. 22. Berlin).

Whatever their degree of accuracy, operations of this kind, that one can execute in indefinite number, are in brief more specious than conclusive; However nothing prevents that sometimes a happy accident permits us to reestablish with some probability certain geometrical principles to which the architect proposed to subject the temple that he had to erect. The taste of the Greeks for geometrical theories authorizes this conjecture.

In this matter it would not be without importance to note that the dimensions of some very ancient temples can bi expressed in numbers by simple fractions, i.e., whose denominator is 2, 4, 8, 16, etc. Those divisions graphically drawn form what is termed a lattice. The plan of temple C of Selinonte corresponds to numbers of that kind.

The sides of its rectangle are in the ratio 45/16 with an error of less than.039 in. on the long side. It is proper to take with that edifice the temples S and D of the same city; they present 8/3 and 39/16 with errors of 1.97 and 2.76 ins. in their lengths. The old temple of Athena at Athens, as well as the temple of Poseidon at paestum, where t the sides respectively have the ratios of 17/8 and 21/8, with errors of 1.97 and 2.76 ins.

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Another remark must be added to the latter; this is that many temples exist, where the proportions of the sides are not expressed by simple numbers.

All that proves that the plans of these edifices were not established according to the same system of numbers nor by the same system of geometrical constructions. In the parallel of Table A, the temple of Concord is that, which best permits the suspicion of geometrical method. Its length is rigorously equal to four times the side of a regular decagon inscribed in a circle with a radius equal to the width of its facade.

It is not impossible that this result, geometrically accurate, may be historically true. That is the impression developed for a distinguished mathematician, M. Jules Tannery, by calculations, that he was quite willing to make on data that we furnished him; two of the operations belong to him, whose result was stated above. We take this occasion to thank him for his kindness.

General Proportions of Elevations.

To explain the principles of these proportions, we shall represent at the same scale two temples of very different sizes, such as those of Zeus at Olympia (Fig. 253) and of Egina (Fig. 254). One can believe that the Greeks in giving great dimensions to the facades of their temples, at the same time would have multiplied the architectural members and ornaments on the vast surfaces thus created. It is not so at all. The facade of the temple of Zeus bears neither a member nor an ornament more than that of the temple of Egina. Only the triglyphs, metopes and other members occupy in the former much larger surfaces than in the latter, but in conditions so that the second is not a reduction of the first.

If one divides the bases of the two temples into a certain number of equal parts, for example 12, the least attention allows him to see that although the proportions of height are unlike, yet they are comprised in both within 6 and 7 of those parts.

This mutual dependence in which are found the heights and widths up to a certain point, is the characteristic feature of the system of proportion applied by the Greeks to the f

facades of their temples.

But it is not the same for the side elevations. This peculiarity is easily explained, the diagrams of Table A have indeed shown us that all these edifeces have different proportions in length.

The various proportions in height for the principal temples are indicated in the diagram of Fig. 255, where all facades are made of equal height. To make the differences visible, draw through the mean diameter of the columns, i.e., the middle of their height a straight line, which is the diameter B B of a semicircle with centre E at the intersection of this straight line and the vertical axis of the facade D E. This semicircle very nearly determines the apex of the pedimenton the temple of Poseidon at Paestum; it passes more and more above that summit in the temples of Theseus and of Zeus, of Corinth and of Bassae, while it falls more and more below on those of Egina, Segeste, Nemea and of Demeter at Paestum. Between these temples are inserted those, that lacking space has prevented us from presenting. Thus, it is with proportions of facades as with those of plans; all differ, all are comprised within very narrow limits, and neither are developed in a regular chronological order. One can verify this last observation by referring to the classifications that we have established, especially in series C and D.

We shall still have recourse to comparative tables to illustrate the peculiarities remaining to be made known.

The ratio of the height of the column to the width of the temple is indicated according to the order of time in the upper diagram of Table C (Pl. XLIX). All these proportions differ from each other, but they succeed each other in a continuity rising very irregularly. For example, the ratio is higher on the temple of Artemis at Syracuse (Pl. XLIX,3) than on the temples of Corinth and of Assos (Pl. XLIX,4,5). This diagram also shows that from the earliest to the latest temple, this ratio is nearly doubled.

It will perhaps have been noticed, that we introduced in the series of Table A, the perimeter of a monument of Paestum usually termed the basilica. That edifice is not a temple, but it has the average proportions of one. Now in the

upper diagram of Table C, one sees that the ratio of the height of its columns to the width of its facade is less than on the temples.[1]

Note 1.p.560. We persist in refusing to see a temple in the edifice of Paestum known under the name of basilica or great portico. Recently Koldewey has compared it with Ionic temples with two internal aisles, such as that of Neandria and the old temple of Locres (Neandria, p. 44-45). Here in brief are reasons why we cannot share that opinion.

1. As shown by the Table on Pl. C, the ratio between the height of the column and the width of the edifice in the basilica is less than the same ratio shown in the temples.

2. The arrangement presented by the edifice of Paestum has been much employed at all times for covered markets and porticos. There is usually at the middle of those edifices a spina or row of columns.

3. Finally, from what is found in Ionic temples, examples of division in two aisles by means of a middle row of columns, it does not follow that the same arrangement may have ever been adopted for the Doric temple. The Ionic style, as we shall see, was early subject to the influence of the Doric style; but it is impossible to find a trace of the influence that the Ionic exerted on the Doric. In the latter, the cella has always retained the form due of the imitation of the megaron.

This peculiarity warns us that in the Doric style the proportions profoundly differ, according as they were applied to temples or to edifices for another purpose.

Likewise in a chronological series are indicated in the lower diagram of Table B the dimensions in the height of both entablatures and of columns.[1] Some of the latter are not represented in the upper diagram because they belong to edifices, whose ruinous condition has not allowed the plan to be recognized. Such are the columns of the temple of Tarente (Fig. 261) and those engaged in the walls of church S. Maria at Syracuse.

The Table that we examine emphasizes the very moderate dimensions of Doric temples. In fifteen of those edifices, the height of the columns exceeds 23.0 ft. and in thirteen others that height does not reach 36.0 ft. The considerable height of the column of the temple of Giants is explained

by the exceptional construction of that edifice.

Note 1.p.563. In all these Figs. the height of the entablature does not comprise the height of the cyma.

Let us now seek the different ratios that exist between the diameter and height of columns, and between the same diameter and the height of the entablature. These ratios are indicated in the lower part of Table D (Pl. L), the diameter being the same for all the columns.[2] The study of this diagram causes us to recognize some remarkable peculiarities.

Note 2.p.563. The temple seen under No. 18 and thus designated as Hera of Agrigente is that frequently called Juno Lucina.

1. In each temple the columns have a proportion very suitable to them, or otherwise stated, the proportions of those supports are different in all the sacred edifices. The lowest ratio is 4.063 and the highest is 6.471.

2. Nearly always the height of the entablature diminishes as the height of the column increases; but the undulating lines that crown the ordinates in the two diagrams of the Table, shows that this diminution does not operate according to a constant ratio in all the temples. The heghest ratio is 2.45 and the least is 1.71.

These two extreme rations correspond neither to the smallest nor to the largest proportions of the columns.

In the lower diagram of Table D, these same ratios follow in the order of heights.

As a summary, the care to diversify the temples was carried so far among the Greeks that they never employed twice the same general proportions in these edifices. The study of our Tables allows the formulation of this conclusion with the most entire certainty.

The Modulary System.

It should not be supposed because the Doric temples are dissimilar, that in each of these edifices the proportions were established by chance; on the con.rary, they corresbond to a body of canonical rules, whose theory Vitruvius has given so awkwardly, that it was almost misunderstood by the architects of the Renaissance as well as by their modeen successors.

The passages of the text of that author in which he exa-

expatiates on the proportions are not connected together. Further, they frequently present a certain obscurity of expression. But Vitruvius had read the treatises of Greek architects lost to us, and only in his book is it now possible to find rather precise ideas on the architectural proportions employed by the ancients.[1]

Note 1.p.564. This is not the place to discuss the question of more or less importance to be attached to the authority of Vitruvius. What is certain is, that while particularly devoting himself to teach the system of proportions employed in his time, he had in his hands the treatises of Grecian architects, in which they explained their practice and the rules that they had applied. He cites Silenos, Theodoros, Chersiphron and Metagenes, Ictinos and Carpion, etc. (VII, 12). Had he sufficiently studied and always fully understood the texts of those authors? It is difficult to say; none of those treatises has come down to us. In any case, the terms used by him in great part are borrowed from the nomenclature created by those architects; he has derived from their works more than one useful suggestion, that the study of t the monuments permits us to utilize better that the commentators of the Renaissance can have done. It is thus for those symmetries of which he speaks, and which virtually contain the entire theory of those auxiliary modules, to which we shall have occasion to return. (Chipiez. Le systeme modulaire et les proportions dans l'architecture grecque. Revue archaeologique. Vol. XIX, 1891). With some attention and a some precaution, one can detach from his essertions the elements of an architectural doctrine, the modulary system, which indeed is that of the Greek masters. The basis of this system is certainly very ancient; but the rules relating to numerical ratios have varied from age to age. It is the same with certain classifications; thus for example, it would be useless to seek to apply to the Doric temples of the 6 th and 5 th centuries what Vitruvius gives of the different kinds of intercolumniations; with the Ionic monuments of t the Hellenistic epoch, one would find least difficulty in making them agree.

We shall state briefly and in a concistent and systematic form the method of proportions, whose elements are scattered

in the treatise of the Roman architect.

By means of the module, and by following a particular method, the Greeks fixed the different proportions of the edifice.

The module is a linear measure that must be comprised a certain number of times in a given dimension of height or width. The dimension must be divided by the module as the width of the monument for temples, the diameter of the orchestra for theatres, the height of the column for porticos, etc.

Figs. 256 and 257 show the effects that result from the use of the module used for heights. The first represents the facade of the propyleion of Sunion, and the second is the portico of Philip at Delos.

Those two monuments have nearly the same height. If one divides it into a certain number of equal parts, i.e., modules, he sees that the base A B contains a number of modules very much less than C D of the portico of Philip. Consequently in the case where the module is employed in that f fashion, the widths may have the most different proportions with relation to the height, i.e., the first are not proportional to the second.

Quite otherwise are the effects of the module of the temples. When in those edifices the widths are extended, the heights increase in proportion or nearly so. This is proved by the temples of Egina and of Olympia represented in Figs. 253 and 254. In the last edifice, the dimension of the module increases at the same time as the width of the facade, and the columns are enlarged in height and diameter, like the other architectural members.

The number of modules that must be comprised in the width of temples differs according to the style of the architecture of the monuments, and the number of columns that enter into the composition of their facades. It follows that the module is a variable measure, but not arbitrary, since it must always divide a given dimension intn a desired number of equal parts.

In principle, the column must have so many modules and t the capital so many. It is the same for the architrave, frieze, cornice and the other parts of the edifice.

Besides, the Roman architect desires the module to correspond to a dimension of certain members of the edifice, such as the diameter of the column, or the width of the triglyph in the Doric order.

But that is not all. The general module being once fixed, Vitruvius subordinates its use to the absolute dimensions of the temple. For example, if the column has a height of 15 ft., the architrave will have a height equal to half the lower diameter of the shaft; while if it is 20 ft. high, it is necessary to divide this into 13 parts, one of which will give the height of the architrave. (Fig. 258, right hand).

Likewise the greater or lesser width of the intercolumniations will change the proportion of height for the columns of the same order. The narrowest intercolumniation (pycnostyle, 1 1/2 modules) must have columns 10 modules in height (Fig. 258, left), and the widest (aerostyle) columns only 8 modules.

Note 1.p.588. Vitruvius. III. c, 10.

It has been proposed to give the name of corrective canons to the rules that modify the typical proportions.[2]

Note 2.p.588. Ch. Chipiez. Le systeme modulaire.

Finally, for each division of the members of an edifice, Vitruvius prescribes a special law of subdivision, which gives rise to measures that have been termed auxiliary modules.[3]

Note 3.p.588. The same.

Let the height of the Ionic architrave be fixed according to the canonical rules.

To obtain the proportions of the mouldings of this architrave, it is necessary to divide it vertically into 7 equal parts; one of these parts will be the height of the cymatium that crowns it. Then one will divide the remaining 6 into 12. Three of these parts will be the height of the lower facia, four that of the middle, and 5 that of the upper facia of this architrave. The other members of the order will be determined in a similar manner.[4]

Note 4.p.588. Vitruvius. III, 5, 10.

By the use of this sort of modules, one obtains as many different scales as are necessary to establish the architectural members, whose proportions are derived from each other,

and one of those determines simple measures, but which would not retain the character, if one thinks of basing them on the module divided into 12 or 16 parts, according to the c custom of the moderns. The auxiliary modules may be very a dissimilar; but it is no less true that they always proceed from a primary measure, that they have in it their origin and starting point.

In these conditions one can no longer attach to the module, the primary unit, the narrow idea of an inflexible scale of proportion. By the use of a particular mode of subdivision, the modular system ceases to be a formula to become a method. By it is explained in great part the extreme diversity in proportions, that we have observed in the temples; it explains why in certain cases the members of those edifices are not similar, even when they so appear at first sight.

Practices so ingeniously combined could originate and be implanted only in a people exceptionally endowed for art. Vitruvius does not hesitate to attribute the merit of them to the Hellenes.

These remarks were necessary; they even enable us to undertake the analytical study of the other proportions of t the temple in the course of this history.

The two adjacent Tables contain in numerical form all the facts that are presented in graphical form in our Tables.

Note. p. 569. It is necessary to correct in Tables A and B the dimensions of the temple of Egina; 41.54 × 90.78 ft.; the plan of this temple should come immediately after that of the temple of the Giants in Table A.

15. Polychrome Ornamentation.

When one observes today the best preserved of the monuments of Greek architecture, they now offer to the eyes only a uniform color. This is either as at Assos the brown of a volcanic stone, or as in the ruins of Sicily the grayish tint of calcareous tufa; on the temples of Attica, it is t the whiteness of marble. For a very long time modern architects were deceived by this appearance. When they attempted to imagine those edifices as they must have shown themselves to the eyes of the people who built them, they represented and restored them like the edifices, which they were accustomed to construct, allowing the natural color of the stone

to be seen everywhere, both on the large areas of the walls as in the hollows of the mouldings. If they attempted to restore them, they only counted on the work of the chisel and on the play of shadow and light, to accent the main lines of the structure, to emphasize the mouldings and to model their ornaments.

Only about the middle of the last century (19 th) did men think of asking if it were true that the antique temples in their fresh newness, presented that uniform and monochrome appearance. The first that proposed the question, to entirely solve it immediately, was an architect of German origin, Hittorf, but established in France. He undertook in 1823 a and 1824 to study what remained of the ancient monuments of Sicily, to measure and draw their plans, elevations and details. In the course of those labors, two kinds of facts attracted his attention. On the one hand, he noticed certain fragments of terra cotta covering tiles and facing slabs that were ornamented by designs executed by means of colors that firing had fixed on the clay. On the other hand, by examining with minute care the surfaces of the mouldings of the architectural members, he frequently perceived on t the lower sheltered surface of a moulding or in a recess of their reentrant curves, traces of colors formerly applied on the stucco that covered the stone. Those unexpected discoveries excited his curiosity; he found the same colors,, better marked and more vivid, on the remains of the frieze or cornice.

Hittorf was convinced. From that moment it was proved to him that antique architecture was polychrome, i.e., that in its system of decoration, it assigned an important part to color and its variations. On his return, he hastened to communicate his discoveries to all, that they could interest, to explain the theory that they had suggested to him, and propose its adoption to learned men and artists. To convince the incredulous, he exhibited fragments that he had brought, where were still discerned some vestiges of a former coloring; he showed drawings made on the spot at t the time of excavation, before the fading colors, which then diminished rapidly and ended by vanishing. To reply in advance to the objections based on the singular effects, t

that must be produced by that variety of colors, he presented restorations executed in that spirit, and he added to all that graphical apparatus memoirs in which he invoked both arguments of facts and reasons of feeling and taste. All those materials, dissertations and drawings, furnished him with materials of the work later published in 1851 under the title:- Restitution du temple d'Empedocle a Selinonte, ou l'architecture polychrome chez las Grecs, avec un atlas.[1]

Note 1.p.573. XVI+845 pp. Atlas in folio, 23 colored plates. Didot. Paris. One cannot imagine a book more badly prepared; instead of explaining his thesis methodically, with all the proofs for its support, the author scatters those proofs throughout long chapters, in which he discusses with numerous repetitions the objections presented by his principal opponent, Raoul-Rochette. The work no less retains great value by all the facts contained and especially by its plates, where are gathered many monuments then unpublished; but the text might have been abridged by two-thirds without inconvenience.

Meantime the ideas of Hittorf had made their way, though very strongly opposed at first. In Germany the intelligent and learned architect Semper had accepted them and had confirmed them by his own remarks. One of the masters of archaeology in France, Letronne, became their avowed defender in the controversy sustained in that respect against Raoul-Rochette. Architects being once aroused, had found everywhere in edifices taken as the subject of studies, the remains of these colorings which their predecessors had been unable to see, because they did not look for them. Documents accumulated in recent years so as to remove the last doubts, that can have still remained in some minds convinced with difficulty.[2] A more extended and more accurate knowledge of the monuments of oriental art has demonstrated that everywhere, from Egypt to Chaldea and Assyria to Persia, architects had by various procedures covered with brilliant colors the facades and interiors of their edifices, that they had employed color to accent reliefs, and to better emphasize their general arrangement for the eyes of the spectator; this system was suggested or rather required from the artist

by even the intensity of the light of southern countries, by the violent reflections that lessen the value of cast shadows, and thus reduce the relief of the surfaces.[1] The conditions of the surroundings were nearly the same for Grecian art, and one further knows all that this art borrowed from Asia; how can it alone have mistaken those necessities of the climate, have refused to take into account the sun, whose splendor must illuminate its buildings?

Note 2.p.573. One will find the entire history of the matter very well presented in Fenger, Dorische Polychromie, large folio atlas of 8 plates and text in small folio of 4? pages (Berlin. 188-). This is in section 1:- Farbefunde und Ergänzungversuche. Before Hittorf, Fauvel after the beginning of the (19 th) century, had divined the part that color played in architecture and sculpture. These results from several passages of his letters quoted in the interesting study devoted to that personage by F. Legrand in Revue architectonique (1897:- of Fr. Sebastien Fauvel. "The reliefs of the Parthenon and Theseion were painted," Fauvel writes; "each object, flesh, draperies, background, had its proper color. On all the mouldings of the two temples, the waterleaves, eggs, frets, all were painted." Fauvel saw the monuments in better preservation than they are today, he was an attentive and intelligent observer. Unfortunately, he published almost nothing; the ideas that he expressed on this subject in his correspondence and conversation were not repeated.

Note 1.p.574. Histoire de l'Art. Vol. I, p. 122-128; 775-77

The Greek architect did not commit that fault; from the first day he had the instinct and passion for color, in the same degree as his predecessors, the architects of Memphis and of Babylon. See that prehistoric Greece, that has just been restored to the light by the excavations of Schliemann and of Tsoundas; see the ruins of its tombs, houses and palaces. In the funerary domes at Mycenae, marble and other stones of varied colors form a many-colored facing on the facades; overlays of metal cover the masonry in the interior of the dome; further, in the hypogeas excavated in the hill itself, the entire enclosure of the doorway is painted black and white, red and yellow. At tiryns and Mycenae, everywhere

in princely habitations, colored plastering conceals the poverty of the materials, and large frescos, actual pictures with numerous personages, extend on the walls of the principal rooms. About the same time other and no less interesting discoveries invite the historian to resume on new grounds the study of a period after the evolution of Hellenic genius; they transport him to the heart of the 6 th century, which invented and created so much, that gathered all the elements of the masterpieces, which were to blossom in the succeding century. This was a revelation due to the excavations of Olympia, Selinonte and other fields of Sicilian ruins, that of the services which the decorator required from colored terra cotta; it was the exhumation, piece by piece, of the remains of the already very rich ornamentation, with which the Acropolis of Athens had been endowed by the generation preceding the Median wars, temples, statues, monuments of every kind composing that. From 1885 to 1888, there were found by hundreds architectural members, pieces of cornices, copings of pediments, steles and pedestals (Fig. 259), reliefs and statues. All those fragments have successively risen from the thick layer of rubbish formed on the plateau after the fires kindled by the Persians, and destructions designed to make room for new edifices erected by Cimon and Pericles. On all those remains, that were preserved intact in the layer of rubbish in which they were buried, gleamed the colors that sometimes still had much splendor, even at the time of discovery. Since then the colors incorporated with the clay have been preserved, almost without change. As for those applied on calcareous tufa or marble, men have endeavored to ensure their duration by covering them with a coat of varnish and by placing under glass the most important monuments. They have no less faded and perhaps will end by vanishing; but faithful copies, made on the morrow of excavation, have noted all their values and give their entire scale.[1] Thus it remains established, at least for the archaic period, that the architects and sculptors, the former on their edifices and the latter on their figures, made a very wide and very constant use of polychrome decoration.

Note 1.p.575. One will find a number of these monuments

reproduced in color in vol. I of Antike Denkmäler, which the German Archaeologic Institute began to publish in 1886 (Pls. 18, 19, 29, 30, 38, 39, 50). We give some specimens in this volume (Pl. XLVI); we shall give others in the succeeding volume.

What those monuments have taught us of their ancient condition, one can already have divined from the indications of the literary and epigraphic texts. According to Vitruvius, on the wooden temple in which he sought the prototype of the Doric temple, a layer of blue wax was laid on the planks nailed to the ends of the beams, that served as models for the triglyphs of the stone temple;[1] that conjecture must have been suggested to the authors interpreted by him, by the triglyphs painted blue, that they had under their eyes. In Greek and Roman writers, there is frequent mention of mural paintings, works of celebrated artists, which decorate both porticos and temples.[2] For those paintings, in which entered all the colors that the painter then grouped on his palette, was required surroundings in harmony with them, that of flat or projecting borders and a darker tone, on which was detached in light the field on which was displayed that series of images. The intervention of the historical painter, as we should say, assumed that of the painter of buildings; the latter had to place his ornamentation in harmony with the work of the masters with which he was associated by the will of the architect, by whom was regulated the entire arrangement of that complex and beautiful entirety.

Note 1.p.576. Vitruvius. IV, 2,2...

Note 2.p.576. Euripides speaks of the "gilded friezes of the temples with the beautiful columns." (Iphigenia in Tauris. Verses 128-129).

The ancients were further so accustomed to see the entire edifice dressed in colors, that neither Vitruvius, Pliny, Pausanias, nor any other theorist or historian of art thought of taking account of that practice; he does not note and only indicates what is exceptional and unusual. Then we cannot be surprised by the apparent silence maintained by classical authors on the subject of the principle of polychromy. This principle is implied in more than one text;

in princely habitations, colored plastering conceals the poverty of the materials, and large frescos, actual pictures with numerous personages, extend on the walls of the principal rooms. About the same time other and no less interesting discoveries invite the historian to resume on new grounds the study of a period after the evolution of Hellenic genius: they transport him to the heart of the 6 th century, which invented and created so much, that gathered all the elements of the masterpieces, which were to blossom in in the succeding century. This was a revelation due to the excavations of Olympia, Selinonte and other fields of Sicilian ruins, that of the services which the decorator required from colored terra cotta; it was the exhumation, piece by piece, of the remains of the already very rich ornamentation, with which the Acropolis of Athens had been endowed by the generation preceding the Median wars, temples, statues, monuments of every kind composing that. From 1885 to 1888, there were found by hundreds architectural members, pieces of cornices, copings of pediments, steles and pedestals (Fig. 259), reliefs and statues. All those fragments have successively risen from the thick layer of rubbish formed on the plateau after the fires kindled by the Persians, and destructions designed to make room for new edifices erected by Cimon and Pericles. On all those remains, that were preserved intact in the layer of rubbish in which they were buried, gleamed the colors that sometimes still had much splendor, even at the time of discovery. Since then the colors incorporated with the clay have been preserved, almost without change. As for those applied on calcareous tufa or marble, men have endeavored to ensure their duration by covering them with a coat of varnish and by placing under glass the most important monuments. They have no less faded and perhaps will end by vanishing; but faithful copies, made on the morrow of excavation, have noted all their values and give their entire scale.[1] Thus it remains established, at least for the archaic period, that the architects and sculptors, the former on their edifices and the latter on their figures, made a very wide and very constant use of polychrome decoration.

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state it in formal terms. Fortunately the inscriptions are more explicit; in the accounts of the restoration of the Erectheion undertaken in 385, one finds mention of the salary paid to the workman,"who painted in encaustic the cymatium on the architrave of the interior;" there are also mentioned the leaves of metal purchased "to gild the eyes (of the volutes) of the column."[3]

Note 3.p.576. C. I. A. I-324. See the translations of these inscriptions given by M. Choisy in his Etudes epigraphiques sur l'architecture grecque. III, p. 119, 133.

Since attention was called to these peculiarities, there has scarcely been a single excavation of any importance, t that has not brought new arguments to support the doctrine, at first opposed by such passionate denials. Today one no longer meets any person, that contests the principle of the polychromy of ancient edifices. Those who first supported it would perhaps hesitate, if they were still living, to follow to the end those who present themselves as their disciples and followers. It often occurs that new converts exceed moderation. One knows that personage of Boileau, who boasted of having placed nutmeg in all the dishes to honor the guests. More than one architect today acts in the fashion of the Repas ridicule.

Do you love color? It is placed everywhere, he will voluntarily inscribe below his sashes, when he undertakesto show by a series of designs, what might have been in its first splendor, some one of the most beautiful edifices of antiquity. To the objections presented by the archaeologist, the artist sometimes contents himself with replying, that the effect so obtained is most happy, and that he needs nothing more.[1]

Note 1.p.577. "I have only one reason, that I have to enforce. In my eyes it is superior to all others; polychromy is good; it is beautiful." E. Loviot. L'Architecture. 1889,85

The historian of art cannot place himself at that point of view. What is important to him is not to seek what is the richest and most sumptuous ornamentation, that the imagination of the decorator could invent for an edifice like the Parthenon; it is to know by the study of the monuments and by that alone what was the practice of the Greeks in that

matter during the course of the classical age, what colors they employed for decorating their buildings, and on what parts of these they were placed, in what spirit and with what reserves they employed this resource. There is a question of fact, in which esthetic considerations have nothing to see. The only data that count for the solution of the p problem are what are derived from evidence of attentive and competent observers.

We have gathered this evidence; we have consulted the statements of architects and of archaeologists, who in recent campaigns have examined the remains of monuments uncovered by them, at the moment these left the ground, and what results from this examination is, that perhaps except on a single edifice, not a trace of color has been found that was placed on the stone below the capital of the column. This is affirmed with certainty after long years of study pursued on the ground by German architects, who labored on the uncovering of Olympia, and on that incomparabel field of excavations, all Greek architecture had passed under their e eyes, represented by buildings of which some, like the temple of Hera and several treasuries, date back to the 7 th and 6 th centuries, while others were contemporary with t the successors of Alexander and even with the Roman domination. What for them resulted from the verifications, that they made on the numberless fragments of every age, is that polychrome decoration, as a general rule, was applied only on the upper parts of the edifice.

Note 1.p.578. This is what those architects agreed in declaring to M. Pottier, who questioned them on that subject, when in 1879 he visited them at Olympia. (L'Architecture, 1889, p. 28,29). The observations that M. Pottier made on the fragments shown to him confirmed the statements of the directors of the work.

How was the constructor brought to adopt this rule? Perhaps we can divine the motives that decided this. Applied to any object, vivid and frank colors seem to give it more body and solidity; they cause it to appear nearer to us than it actually is. Now on a great edifice the entablature is sensibly farther from the eye than the stylobate, than the columns and the walls of the cella. Then it was particularly

to that entablature, its surfaces and mouldings was it important to ensure the benefit of the virtues of color, by c calling on that to correct in a certain manner the perceptions of sight. Thanks to the intensity and variety of tones, the architect thus corrected singly all the lines of the d design of the mouldings; he called attention to the correspondences and the contrasts by which were indicated the proportions, that certain analogies or certain differences in function established between the different members of that entirety. The effect of diminution and reduction produced by distance thus found itself corrected; the vigor of the local coloring gave to each motive its independence and its full value; it singularly accented the fineness of the outlines.

What ended in calling in the intervention of color was t the character of the architectural members composing the e entablature. Among these was scarcely more than a single o one, the triglyphs, which was so composed as to be able to do without color, it seemed. Aside from them, the contrasts of shadow and of light arranged in the hollows and the very boldly modeled reliefs would have sufficed to make apparent to the eye the design and rhythm, even very far away; but what is true of the principal member of the frieze is not so to the same degree of two other parts of the Doric entablature. In the architrave and particularly in the cornice are the drops, narrow fillets, then tablets and light cymatiums. Each of these elements of small dimensions and of l less accented form gains much by distinguishing it from its neighbors by a coloring appropriate to it; by that alone it retains its importance and its expressive value, however h high it may be placed

Finally, it is not alone by reasons of taste, that is justified the method taken there by the architect; it is also explained by the history itself of the art. Wood furnished to the constructors of the most ancient temples their columns and entablatures. That portion of the building was most exposed to storms; to protect it from them, men commenced by painting; later, they frequently had recourse to the use of terra cotta. Having given the facility with which color is placed on clay and remains forever when once fixed by fir

the facings, first adopted for the protection that they ensured, did not fail to be utilized for another purpose. The brush of the ceramic painter laid on it palmatiums, flowers and rosettes, plaits and frets; this rich ornamentation is especially applied to the cornice, quite particularly to it. The effect thus obtained seemed happier; thus in certain regions of the Grecian world, men thought of fitting these slabs of terra cotta to buildings, that from the nature of their material did not seem to demand that sort of complement; men had come in Italy as in Sicily to contribute to the embellishment of more than one temple entirely constructed of calcareous tufa, and there again the roof and the upper part of the entablature were fitted with these facings. The eye was thus accustomed to see color bloom on the surfaces of mouldings of the crown; it would have been out of its element if not found there, at this same place, on temples where the architect had concealed from top to bottom the coarse grain of the stone under a layer of stucco. This stucco lent itself to receive a coloring, that gave the equivalent of what had been demanded elsewhere from slabs of terra cotta.

In this matter it is important to distinguish what has been formally observed and can be made a general rule, from what appears hypothetical or only in the state of an exception. See in what terms R. Borrmann expresses himself on this subject, one of the architects participating in the long labors of the excavations of Olympia. We have the result of his experience and personal observations;- "Taking into account only facts, it is proved, that the Doric style follows fixed rules that are everywhere respected, when it applies color to various architectural members. For a great number of monuments and particularly for most of the edifices of Olympia, of those built of shelly limestone, it is a settled question except that of the coloring of the plane surfaces of the wall and of the shafts of the columns; everywhere was there as a ground the light and white tone of the stucco. No indication gives reason to think, at least on the buildings of Olympia, that leaves were ever painted on the echinus of Doric capitals. There were found in our excavations many very well preserwed capitals, even several

appearing as if just from the hands of the workman; none of them showed the least trace of color not even of ornaments sketched on the stone; all that is observed is that the fillets cut at the base of the echinus were colored red. On the parts of the building that received a uniform color without ornaments, for example on the triglyphs, frequently if not always, the color seemed to have been mixed with stucco. For the Doric entablature, one is authorized to establish as a rule with reservations and exceptions that may present themselves; there were constantly painted red the fillet of the architrave, the inclined soffit of the cornice bed, the mutules, the small receding surface of the lower part of the cornice, and finally the lower moulding of the cornice, where it had not received a special ornamentation, in other terms the narrow band on which rested the mutules. The stucco ordinarily appeared in its light color on the vertical face of the band between the mutules.[1] The same regularity for the fillet that bore the drops on the architrave and for the mutule to which they are attached in the cornice, as well as for the triglyphs; all that was painted a blue more or less dark. The drops were most frequently red, sometimes also of the natural color of the stucco; it also occurred that they were painted yellow or gilded. One divines certain correspondances arranged in the coloring between the members forming counterparts in the general arrangement of the structure. The little cymas of the cornice and of the capital of the ante are ordinarily decorated by painted leaves. The ground of the metopes was colored only when it served as a ground for sculpture; it was then red or blue; otherwise it remained white. The grounds of the pediments and those of the sculptured friezes were generally painted red or light blue."[1]

Note 1.p.580. This assertion does not fail to surprise one; those little surfaces remaining white must produce the effect of spots on the red and blue grounds of this rich cornice.

Note 2.p.581. Berlin phil. Wochenschrift. 1895. p. 49, 50. In the study that Borrmann devoted to the second edition of Durm's manual, whom he reproached for having given too large a part to hypothesis in the statement, that he presents of the practice of polychromy). [illegible] the principles indicated by Porrmann the

indicated by Borrmann adheres the author of Plate CXII of the Baudenkmäler (Olympia, Vol. I), a plate designed by Paul Gräf, and where is presented a restoration of an angle of the entablature of a treasury. The columns, their capitals, the architrave and even the cornice there retain the natural color of the stone or of the stucco imitating that tone. Colors are placed on the capital of the ante, on the hollow of the necking, on the frieze and on a part of the cornice. The polychrome decoration remains very sober.

If such is the nearly constant practice of the Greek architect during the entire duration of the classical age, these rules, as we were informed by the author himself of this statement, still do not fail to comprise certain variations and exceptions. Thus in the temple of Egina -- the fact seems well attested -- the pavement of the cella was covered by a layer of very red stucco.[2] As for the stylobate, there has never been perceived the least trace of color on these steps. For the columns, it is believed that on one of the shafts of temple E at Selinonte were distinguished three circular bands, a sort of belts, one of which was red, another white and the third blue;[3] but assuming the observations to be correct, the fact remains unique. Nowhere else has been indicated either red or blue on the drums. The only difference between the temples is, that the tone of the stucco in certain edifices, as at Egina and in most of the temples of Sicily and of Italy, is yellowish, while on the monuments of Olympia, it seems to have rather aimed to imitate the whiteness of marble. What is true of the column is likewise so of the walls of the cella; one finds there only a stucco that approximates more or less to the color of the stone. It is affirmed, that no leaves are painted on the echinus of any capitals discovered at Olympia, and we have no reason for doubting that assertion; but it is no less true, that on several capitals of Paestum have been found small ornaments, leaves and flowers, whose relief is scarcely sensible (Pl. XXVI). Due to a special coloring, some vestiges of which are elsewhere discovered on the stucco, these ornaments are detached from the ground; without it they would have been scarcely visible.[1] These plant ornaments have been sought in vain on the echinus of the capitals

of Egina, which did not present their representation when the temple was restored;[2] All that was found there were the remains of a stucco, whose actual color was burnt sienna, and is believed to represent a red, worn and faded by long exposure to the air.[3] It is the same for the abacus; a fret is drawn there in the restoration, although it was recognized that the stone gave no indication on that point. On the contrary, the red tint assigned to the architrave was justified, it is said, by numerous traces of red that still existed on the outer face of the band; this red had been mixed with the coating and was still vivid in places.[4] If not deceived by appearances, the architect did not follow here the same rule as at Olympia, where the architraves appear to have remained white.[5] As for the scrolls that were drawn in yellow and green on that architrave, they are pure inventions.[6] On the other hand, the method assumed by the author of the restoration for the decoration of the frieze and cornice does not vary sensibly from those, that we have indicated for Olympia. There is only one difference; in this restoration of the two upper members of the entablature of the temple of Egina, blue is the dominant tone; it is here assigned to the mouldings, where one would expect from the observations made on the ruins of Olympia to find them colored red. Further are details of secondary importance; debatable as some of them are, the polychrome decoration no less remains in every restoration, whose author adheres to the indications furnished by the monuments, assigned and reserved to the part of the edifice for which the first models were given by the glazed tiles, where the principle was established and the type was created. It is certainly so on the temples of the 5 th century; but it is possible on certain more ancient edifices, that the architect employed color more largely. It is the same in their statuary; the coloring that the archaic sculptor gave to his figures is more varied, the tones are more frank and are more boldly extended over all surfaces, than in the works of the succeeding age.

Note 2.p.581. Loviot, L'Architecture. 1889. p. 85. This evidence is confirmed by the statuary Eugene Guillaume, who told me of having himself picked up one of those fragments of red stucco and of having reported this to Garnier.

Note 1.p.582. On these traces of color below the echinus of the capitals of Paestum, Hittorf, Arch. poly. p.45, Note 1; Garnier, Le Temple de Jupiter Panhellenion, p. 18.

Note 2.p.582. Ch. Garnier. The same. 1889. Pls IX, X.

Note 3.p.582. The same. p.18.

Note 4.p.582. The same. p.19.

Note 5.p.582. We should state that Fenger in the restoration, that he gives of the entablature of Egina (Die Dorische Polychromie, Pl. I), in spite of the example and the a assertions of Garnier, has not believed that the architrave should be colored red.

Note 6.p.582. Garnier. The same. p. 20.

There are other sensible differences between the tones t that fire incorporated with clay and those that the brush laid on the stucco. If the latter were as well preserved as the designs on the slabs of terra cotta, we should also perhaps discover, that the motives varied within certain limits, when the decorator changed the procedure. In any case, the palette of the ceramic painter was poorer than that of the painter of buildings. The first only employed four colors, white, black, yellow and red, the four colors according to the evidence of Pliny, that were alone used until the time of Alexander by the artists, that we would call historical painters, Zeuxis and Apelles (Pl. VIII, IX).[1] The second a adds to these fundamental colors blue and perhaps green. The blue is sometimes light and sometimes dark, and everywhere alternates with red in the ornamentation of Ionic c capitals and marble cymatiums, that were brought to light by the recent excavations on the Acropolis of Athens, and came from edifices ruined in the 6 th century;[2] numerous v vestiges have been found in the channels of the triglyphs of many Grecian temples. As for the green, one cannot deny that traces of it have not appeared on more than one monument;[3] but does it there represent accurately the original tone, that which the painter desired to place on the stucco or the marble? It is permissible to doubt this. All those who have handled those faience figurines, that Egyptian t tombs supply in thousands, have proved that on a number of them, the beautiful blue glaze with which the workman covered them, by the prolonged effect of time and dampness has turned green over the entire statuette, or sometimes only

on a part of its suffface. It must be by an alteration of that kind, that it is necessary most frequently to explain the presence of green in what remains to us of the polychrome decoration of Greek edifices, thus on the cornice of t the old temple of Athena; if nearly everywhere the blue tint has become greenish, it has retained its original value in places; it is then allowable to restore this in the whole of the motive.[1] Green does not change to blue. On the other hand, by mixing yellow and blue, the painter obtained at p pleasure all the hues of green, and it is possible that on certain architectural members, for example on the cymas, p plant ornaments like leaves and flowers may have been sometimes made of green.

Note 1.p.583. The elements of Pl. VIII are borrowed from Pls. III and I of Dörpfeld. Ueber die Verwendung, etc. Pl. IX is executed after De Luynes and Debacq. Temples de Metaponte. For polychrome decoration executed by means of terra cotta, also consult Pls. CXV-CXXIV of Olympia. Baudenkmäles, Vol. I, and the description of those plates given by R. Borrmann, and enriched by numerous illustrations inserted in the text. On the terra cottas of Greece proper, see Fenger, p.24,

Note 2.p.583. Ant. Denkm. Vol. I, pls.18, 29, 38, 50.

Note 3.p.583. Green was found on the cornice and in the coffers of the temple of Nemesis at Rhamnus.(Uned. ant.of Attica. 1817. Chap. VI, referring to pls. 3 and 6.

Note 1.p.584. This is stated by the architect Wiegand, w who studied and published these fragments.(Ant. Denk. I, p. 28). In the representation of that cymatium given by him, he has restored the original blue. (Pl. 38, A^2).

Yet the decorator must have made but a very limited use of that color; he must have employed it only to bring into view a certain slight detail, in an elegant and complex ornamentation; it cannot render him the same services as red a and blue, aid him as efficiently in accenting the principal lines of the edifice, and what one can term the joints of the mouldings. Blue contrasts with red more frankly than green, it presents firmer and happier contrasts with it; also it everywhere replaces black, to which the ceramic painter had assigned such an important part in composition of his colored facings. By this substitution of blue for black, the

general appearance of the edifice became lighter and gayer. We can have doubtless given now some examples of this mode of ornamentation, that we have taken from monuments dating from the 6 th century, but we should have to show only detached fragments of edifices, which were mostly of small dimensions, that have been completely destroyed, and where it would be impossible to restore their entirety. When we shall study the marble temples of the 5 th century, we shall seek then to give an idea of the effects obtained by the direct application of color on stucco or stone, as we have attempted here for a different kind of decoration. It will then suffice to compare those two series of plates. The comparison will allow one to measure the advance made from the time w when the artists of Sicily and of Italy required from the potter colored slabs of terra cotta, which they nailed on t their cornices, and that where Ictinos and Mnesicles employed painters, whose collaboration is mentioned by the accounts of the works on the Akropolis, in which they charge there d discreet assistants with extending in the entablatures of t the Parthenon and of the Propyleion the brilliant ornamentation of a polychrome decoration, that otherwise presents m much richness and variety.

Also when we shall describe these edifices, we shall have to solve a question that has been much discussed, that of knowing whether the marble of the parts of the building where it was supposed to retain its natural color as frequently stated, received a glazing that tempered the whiteness and softened the brilliancy, and questions proposed in nearly the same terms for the nude in statuary. Without prejudging this subject, we should now point out an error sometimes committed in regard to the appearance presented today, not only by most marble temples, but also by many edifices built of calcareous tufa. When one travels in the South of France, Italy, Greece or North Africa, he admires the beautiful golden patina of a silky and warm tone, which is for much in t the picturesque beauty of a certain celebrated ruin. In that patine, dear to artists, men have desired to see the remains of a coat of painting or colored stucco applied eveeywhere on the stone; but that hypothesis is not sustained by examination. The patina ordinarily exists only on one or two sides

of the edifice. On the others it is replaced by black spots. Even where it has the most vivid hues, it presents very irregular spots and veins; it varies in intensity from one column to another. Chemical analysis has demonstrated that this tine is due to the creation of an oxide of hydrated iron, t that under the influence of the moist air and heat, is formed by the gradual decomposition of the skin of the marble, or even of certain other stones.[1] Neither the wind that drives the rain nor the rays of the sun equally strike all the facades 6f the building; it results that this alteration is every where produced in the same manner; consequently the f form and color of the oxide change with the orientation of the facades.

Note 1.p.585. Lepsius. Marmorstudien. p. 18, 121; Durm, p. 181, Note 150.

On slabs of terra cotta as in paintings executed on stucco or marble, the colors were laid flat beside each other, without intermidiate hues to form the transition; but the painter with a sure instinct knew how to avoid contrasts, that would have produced a disagreeable effect to the eye. Thus in ornaments the red and blue are ordinarily separated by a white and black band or by a narrow band of gold. Besides, where architectural members are concerned, such as the triglyph a and metope, one of which is colored white while the metope is frequently colored red, the two tones touch; but the surfaces are not in the same plane, and the cast shadows soften what hardness that juxtaposition might have. One can further count on distance to lessen the boldness of certain contrasts to avoid all risk of violence and excess.

If one knows what tones served to establish that decoration he is less advanced in regard to the nature and chemical composition of the colors employed for that purpose. Here is w what was indicated by some analyses made of fragments of painted clay and of colored stucco collected in Sicily and at Athens.[1] The white is white lead or chalk, the black being burnt iron or calcined bone, what is termed animal black. Y Yellow is ochre. The red appears to have been sometimes an earthy oligist iron and more frequently natural cinnabar. As for the blue, it is a carbonate or silicate of copper, what Vitruvius calls blue of Alexandria, a paste which he gives

the recipe;[2] this is the blue likewise used by the sculptors of Athens in the 6 th century, and later by the coroplastes of Tanagre for coloring sometimes the nudes and always the draperies of their statuettes or figurines.

Note 1.p.586. Hittorf. Arch. poly. Chap. 74. Rayet. Bull. Soc. des Antiquaries. 1880. p. 169.

Note 2.p.586. Vitruvius. VII, 2.

On temples of tufa, where as on the triglyphs or on the e entire length of an architrave one desired to have only a u uniform tone, the color was often mixed with the stucco, so that it did not risk disappearing as long as the latter continued to adhere to the stone. As for ornaments, such as pal matiums, flowers, scrolls, they can only be traced with the brush. By an inscription already cited, it is known that at least on marble, the work was done by the encaustic procedure, i.e., by means of colors mixed with wax, which were s spread on the ground by means of hot irons. The same document informs us that in certain very careful edifices, such as the Erechtheion, gilding was also employed; on the Doric order the drops were best suited to receive that ornamentation. The Greek architect does not seem to have known a practice very common among us, that consists in representing a fictitious masonry by lining the joints. This sort of trickery was not to his taste. The wall or column of tufa, when it was covered with stucco, rather assumed the appearance of a monolith.

Different methods were taken to execute the ornaments destined to vigorously detach themselves from a light ground (Smig. 260). The surfaces on which vestiges are found do not appear to have been treated in the same fashion always; it seems that the color was sometimes applied on the dry, and sometimes on fresh stucco. The motives were sometimes modeled in the stucco in very slight relief, which would scarcely be felt without the color laid on it; this was the case for the capitals of the basilica of Paestum decorated by leaves and flowers (Pl. XXVI). When one had to paint directly on the marble, the motive was often outlined by a very slight hollow sunk in the surface, that was then filled by a thin coat of color; this procedure seems to have been earliest employed. Besides, men were contented to trace with

the point the outline of the motive, and instead of polishing the marble within this outline, as done in the sunken hollow, the surface was pointed with very light blows, so as to obtain a grain to which the coloring matter attached and fixed itself. Finally, there are also marbles on which the ornament was traced by the brush in free hand, without a preliminary sketch. In the museum of the Acropolis at Athens, where are collected so many curious remains of the architecture of the Pisistratides, one finds examples of the use of three different procedures.

As indicated even by this diversity, it was necessary to endeavor to lay that painting on the marble and to fix it there; on the contrary was easier than to apply it to wood with every chance of duration. This was certainly done on t the structures of the Mycenaean ages, where wood held such a great place. Painting was at first employed for its preservative virtue, but at the same time it served to enliven the appearance of buildings by the variety of the tones, t that covered the panels and beams in the interiors as on the facades. Timber had since lost much ground, but in the parts of the edifice in which it had maintained its places and where it was visible, it certainly was covered by a coat of p paint. At the same time that it ensured preservation, it served to give an appearance that placed it in harmony with the entirety in which it played its part. In what remains of the marble ceilings of certain porticos have been found very apparent vestiges of color on the mouldings of the coffers, and sketches of certain motives, such as gold stars detached on a blue ground. Where the ceilings were of wood, the same tones and the same ornaments must have been applied on the small beams forming those compartments. In the interiors of t the cellas, in which were exposed around the chryselephantine statues a number of precious offerings, objects of gold, silver and ivory, one could not fail to give a decoration of some kind to the beams, that formed the framework of the ceiling above the single or three aisles of the sanctuary.

There will be opportunity later to complete these brief indications, when we shall have to describe the edifices of t the 5 th century; but these now suffice to make understood the use that the Greek architect made of those colors, that

he spread on the clay, stucco, marble or wood, how he utilized them for the decoration of his edifices. There is a different species of polychromy called natural polychromy; it is obtained by combining natural materials, and consequently of different colors. In one sense it is easier to use than that in which the ornamentation is created by the application of colors spread with the brush; but if it can produce effects that have their richness and beauty, it does not lend itself in the same measure to the execution of the ornamental motive. Of this natural polychromy the Mycenaean decorator made frequent use; we have verified this in studying the domed tombs of Mycenae and of Orchomenos. It does not s seem that this custom was retained during the succeeding age; we can cite an edifice of the archaic period, where as in t the treasury of Athens, the architect had caused stones of very different appearance to enter into the composition of his facadesa Nothing is better explained than this change of method; it was in calcareous tufa that the temples were built, and everywhere stucco covered this tufa and concealet its coarseness; now the coloring was easily applied to s stucco and permitted one to obtain more readily contrasts, that had been previously required from the combination of porphyry and quarried red, green or black stones. Men will return to this method only when they employ materials, whose imperfections will not have to be concealed by means of stucco; we shall see in the Erectheum the marble of Eleusis combine its dark tint with the whiteness of the marbles of Pentelicos.

Natural or artificial polychrome decoration is then contemporaneous with the first attempts of Greek architecture; it is developed with that art, and the latter has never ceased to regard it as inseparable from the edifices, that it created; it has transmitted the tradition to Byzantine art and to that of our western middle ages. One has difficulty to understand how in the course of the last centuries, this t tradition was abandoned, how the principle itselfhad been forgotten or misunderstood. In nature, does a living,being present itself to us without its proper color, where variations of color and hue distinguish for the eye the different organs, and emphasize the plan of the internal skeleton, or

mark the differences of age or sex? Earths and stones, only the objects belonging to the mineral world sometimes have a uniform gray or brown color. Now an edifice by the forms of which is expressed the thought of a civilized people, an edifice that the genius of the master has modeled freely and with love, this expressive edifice, the child of both the collective soul and of individual initiative, is truly an organic body and a living being. Why did it not also present that variety of colors, which we find in the plant kingdom, in the plant as in the tree, in the animal kingdom, from the humblest zoophyte and the smallest insect to the great mammiferas and even to man? If the temple did not have its proper coloring, if it had offered to the eye only the abstract and monotonous whiteness of a stone, that everywhere remained like itself while fulfilling different functions, according to the place it occupied in the building, the temple would have been outside life, and that would not have been desired by the artist, who as the poet says, "is a creator after God."

16. List of principal Doric Temples preceding the Near 430.

In the preceding pages we have had occasion to indicate f from different points of view the peculiarities, that characterize those of the Doric temples preceding the second third of the 5 th century, of which exist remains sufficiently important, for one to restore the plan entirely or in part, d define its style, and up to a certain point, fix its age by a probable conjecture. This not a special history of architecture; we cannot then devote here to each of these edifices a monograph that would require a lengthy extension. We have presented the general theory of the Doric style and the history of the progress of that art; it will suffice to add to that a series of brief notes, in which will reappear as arranged in the probable order of time, all the temples mentioned above and also some others.

Some brief indications will there recall the principal features peculiar to each monument, that form its originality. For the edifices from which we have borrowed our examples, references will be made to the general views, details and plans that have been given in the course of these studies. As for the monuments that have been cited, we shall add to

the mention made of them some brief bibliographical notes, that will indicate to the reader the works in which their remains are described. Finally, we shall insert in this list some illustrations, whose place would not be in the general explanation, that we have presented for the methods and procedures of Doric architecture.

Below all Figs. contained in the Chapter terminated by th this list, we have indicated the source from which they came. But that mention does not imply that we have servilely reproduced the drawing of the author, whose authority we invoke. Without adding anything or altering the documents, that we have placed in use, we have presented them in most cases in a manner to make them more intelligible; in brief, we have chosen our methods of representation. Thus the temples represented in lines in works especially intended for architects, have been rendered by us for effect, i.e., with the shadows comprised in them. the reader will thus much better take into account the character of the forms of the succession of the planes. It is the same for the numerous architectural details to which we have had to call attention, for example for the bases and capitals of columns or antes; if we had shown them as given by the works from which they were borrowed, the illustrations would have been intelligible only to persons accustomed to the methods of geometrical drawing. We have placed them in perspective; this mode of presentation permits the relief to be seen at first sight.[1]

Note 1.p.591. Temples that have not been mentioned in the course of the Chapter are marked by an asterisk. Abbreviations employed are:-- F, facade; C, dimensions; E A C, intercolumniations at angles

Heraion at Olympia. Intercolumniations. Facade (beginning at left); 10.9′; 11.5′; 11.9′; 11.75′; 10.52′. Internal columns at ends; 10613′; 10.7′. Two columns of the portico, 6 at ends, 18 at sides (angle columns are counted twice always). Inside are two rows of 8 columns. Two pronaos, front and rear.

Pls. IV; XII; XIV; XXV,2; XL,12; XLII,8,9; XLVI; XLVII,25; XLVIII; XLIX; Figs. 188, 189, 190, 191, 192, 193, 194, 195, 196, 204.

On the subject of the history and arrangement of the Heraion, the changes that it may have suffered in the course of

centuries, consult the memoir of Wernicke. Zur Geschichte d der Heraions, which forms the second part of his Olympische Beiträge. (Jahrb.von Inst. Archaeol). 1894. p. 101-114).

Temple of Tiryns. The temple erected on the site of the palace of Tiryns must have been one of the oldest monuments of Doric architecture in the Peloponessus, to judge from the little that remains of it, by the decoration of one of its ornamented tiles (Pl. XLV), and by the profile of its capital (Pl. XXIV,1,2). This is the most archaic in form and appearance, of all capitals of this order that have remained to us. It is distinguished by the width of the abacus; that is nearly equal to twice the diameter of the upper part of the shaft, a proportion already sensibly reduced in the temple of Corinth, and that one finds again only in the temple of Demeter at Paestum. (Schliemann and Dörpfeld. Tirynthe. p. 274-276).

Temple of Hera at Argos, or rather between Mycenae and Argos. This uas the principal religious centre of Argolis; there must have been from a very early time an important edifice; but of the first temple which was burned in 423, there remains only the substructure in Cyclopean masonry. The depth of the layer of cinders appears to indicate a building into whose construction wood entered for a large part.

Ch. Waldstein. Excavations of the American School of Athens at the Heraion of Argos. 1892. New York. 20 pp + 8 pls.

Temple of Cadacchio at Corfu. F. 6. Right side, 3 existing columns; left side with 6. Probably 12 columns on each side. 20 flutes. F, Internal columns; 5.8′; 7.48′; 7.48′; 5.8′. No rear pronaos. Frieze without triglyphs. Mouldings of very peculiar character. Pediment quite high. Pls. XLVII,8;XLVIII; XLIX,2; Figs. 248, 249.

All that is known of this curious edifice, of which nothing more remains, is due to the English architect Railton. (Antiq of Athens and other places in Greece, Sicily, etc. 1830.

Temple of Artemis ? at Syracuse. F. 6, C.17. Monolithic columns. Middle intercolumniation 8.02′. Portico of pronaos presents an arrangement analogous to that of temples C and S of Selinonte, but without the pseudodipteral arrangement. F Two columns between the ends of the walls of the cella forming antes. It seems that the cella was open at both ends.

Nothing of the frieze or cornice has been found. Cella narrow (30.4′in clear width). Probable length of edifice 177.2′. Pls. XIII; XVI; XLIX,3; L,3; Fig. 231.

Everything known concerning the arrangement and dimensions of the temple, whose front facade alone has been uncovered, is due to the excavations made by Sav. Cavallaro (Tempio creduto di Dioma in Siracuse, p. 10-20, in Bull. Comm. Antich. etc. in Sicilia. VIII. 1875. pls. IV, V). The entire rear p portion of the edifice is still concealed under modern structur

Temple on the Acropolis of Tarente. Two columns are made of several drums and are still standing, engaged in modern structures (Fig. 261). For their proportions, they have been compared to those of the temple of Artemis at Syracuse and of temple C at Selinonte. Height of column with capital 27.8′. Lower diameter of shaft 6.43′; upper diameter 5.09′. Column has a height of 4.46 diameters. Sole intercolumniation measures 12.38′. Pl. L,5; Fig. 261. Notizie d. scavi, 1881, p. 379-383 and Pl. VII. Gazette Archaeol. 1881.p. 151 and Pl. 25. (Photograph).

Temple of Corinth. F. intercolumniations; 12.15′; 13.1′; 13.3′; 13.1′; 12.15′. Extreme intercolumniations 11.4′; the others are 12.13′. F. 6 columns, C., 15. Monolithic columns. Interior with two rows of columns. An opisthodome and two o pronaos. Entablature incomplete. Architrave alone remains, and the drops indicate the places occupied by the triglyphs in the frieze.

Pls. XIV; XXII; XXIII; XXIV,3;15; XXXIX,1; XLVII,21; XLVIII; XLIX,4; Figs 252, 255.

Temple of Assos. F. 6; C. 13. 16 fluter on columns of portico; 18 on those of pronaos. Edges of flutes on portico coincide with axes of columns. Only one column standing. Height of columns calculated by Clarke as 15.7′. F. Intercolumniations; 7.23′; 8.05′; 8.05′; 7.23′. E. A. C. 6.8′; 8.05′, etc. Sculptures on architrave and metopes. No rear pronaos.

Pls. XV; XXXIV; XXXV; XLVII,9; XLVIII; XLIX,5; L,7.

Olympeum at Syracuse. Outside city on the left bank of t the Anapus. There remains the lower parts of two monolithic columnsof tufa with 16 flutes. Height of columns estimated at 26.3′, which gives 4.25 as ratio of height to diameter.

Houel, Voyage pittoresque, Vol. III, pl. 192; Serra di Falco. Antich. di Sicilia. Vol. IV, pls. 28,29; Cavallari-Holm.

Topografia archaeologica di Siracusa. p. 24, 379.

Temple D of Selinonte. F. 6c; C. 13. 20 flutes. Internal columns; F. 14.25'; 14.4'; 14.65'; 14.4'; 14.25'. E.A.C.14.2'. Other intercolumniations 14.7'. Pronaos deep, where antes a are formed by engaged columns. Opisthodome (whose meaning v varies among authors) for an enclosed room, that forms the rear part of the cella). No rear pronaos. Architrave composed of two blocks in height. At the sides, the width of the portico approaches what it would be in the pseudipteral arrangement. Cornice with great and small mutules, that have alternately 3 and 6 drops in front.

Pls. XXIV,4; 16, 17, 18; XXXII, 11; XXXVI; XXXVII, 15; XLVII; XLIX,6; L, 8; Figs. 212, 227.

Temple C of Selinonte. F. 6; C. 17. F. Intercolumniations 13.95'; 14.65'; 14.9'; 14.65'; 13.95'. C.E.A. 13.0'; then 12.73' and 12.7'. The columns at the sides have diameters 6.69 ins less than on the facade. Repetition of columns of facade before the pronaos, an arrangement also found on temples S and T of Selinonte, as well as on the Artemesion of Syracuse. Pronaos without antes. Opisthodome. No rear pronaos. Metopes sculptured on the frieze of the principal facade (Fig. 261). Triglyphs and metopes have very nearly the same proportions, that approaches the square form. Mutules alternate in two dimensions with 3 and 6 drops in front.

For the study of temple C, add to Hittorf's description t the information contained in Notizie d. scavi, 1876. p. 107 and Pl. V; 1882, p. 325-336, Pls. IX, XX; 1884, p. 318-336. With the last works the excavation was completed. Men tried to leave all the pieces where they fell. Numerous impressions of carved stones were found in the excavations in 1882 and give reason to think that the temple was that of Hercules; the image of Hercules and of his club are repeated on most of those impressions. There was in the temple a workshop of intaglios.

Pls. IV,4; VII,2; C; VIII; XVI; XXI,8; XXIV,6,8,21,22; XXXIII,10-13; XL,13; XLV; XLVII,26; XLVIII; XLIX,7; L,9; Figs. 226, 237.

* Temple of Hera Lacinia on the promontory south of Crotone in Italy. There remains today but a single column, still standing on the remains of a substructure formed of great blocks

in regular but unequal courses. The only descriptionthat has been given of this ruin is found in Francois Lenormant. La Grande Grece, Paysages et histoire. Vol. II, p. 216-221. We ex.ract from it what relates to the proportions of the column, which the author declares to be more ancient than those of the temples of Metaponte; "the shaft has 16 flutes, without entasis, but with a diminution of more than one sixth. The lower circumference is 18.4′., with 5.74′ for diameter. The total height of the column with its capital is 27.2′, i.e., 4 3/4 diameters and a small fraction. This is a proportion intermediate between that of the pretended temple of Artemis at Syracuse and of temples D and C of Selinonte, on the one hand, and on the other, of that of the great temple of Paestum as well as of temples A and E of Selinonte. The form of the capital, the enormous extent of its crushed echinus, the breadth and thickness of the abacus, all that approaches rather the first group of edifices than the second. It is also easy to prove on the ground, that the temple of the Lacinian promontory presents in its plan this unusual extension in length with relation to the width, which is the most striking characteristic of the so called temple of Artemis, and in a lesser degree of temple C. It is stated t that in the 16 th century the temple was still almost intact and had 48 columns. Now this number is just that presented by temple C, due to the double row of its front portico. Consequently, to have the number of columns that was seen there before it furnished the materials for the episcopal palace of Cotrone, it is necessary for the temple of Hera to have likewise had 17 on each side, and that like the edifices to which we have compared it, those columns were closer on the lateral facades than on the front and rear facades, so that the abacuses of the capitals nearly touched.

"It results from these observations that the column of the temple of Hera Lacinia is the most ancient example of Grecian architecture that exists on the Italian continent. The d edifice of which it is the last remnant can only have been constructed at about the end of the 7 th or beginning of the 6 th centuries."

* So called temple of Lycian Apollo at Metaponte (Chiesa di Sansone). F. 6, C. 12 columns. Height of columns 18.4′.

Lower diameter of shaft 4.44′. 20 flutes. Dimensions of edifice with substructure, 136′ × 73.8′. There were discovered in the ruins numerous fragments of terra cotta facings.

De Luynes and Debacq. Metaponte. Pls. 7-12. Lacava. Topografia e storia di Metaponte. Naples. 1891. Pls. 2-6. Sonte - Simone. Studi sugli avanzi di Metaponte. Bari. 1875.

Another temple of Metaponte (Tavola dei Palladini or Tempio delle colonne Paládine). There remain 10 columns on the left side and 5 on the right side. Probably F. 6, C. 12 columns. 20 flutes. Lower diameter of shaft 3.6′. Intercolumniations at the sides vary from 9.5 to 9.65′. The plan has not been entirely restored (Fig. 262); all that is known is, that the cella was divided into a naos (37′ long) and an opisthodome (12.7′). The architrave no longer has its cornice; it must have been two courses in height. For the form of the c capital, there is not a perfect accord between the drawings of Debacq and those of Sonte-Simone.

Plates IX; XXIII,2,13,14; XXV,1; XLIX,8; L,10; Figs. 216, 220, 235.

De Luynes and Debacq. Metaponte, pls. 3-6. Sante Simone, Studi, etc.,pls. 1-4. Lacava, Topografia, pls. 8-10. Römische Mitt. Vol. VI. 1891. p. 363.

Temple of Demeter at Paestum. F. 6; C. 13 columns. 20 flutes. F. Internal columns, 8.61, 8.63, 8.62 .8.63, 8.61′. E E.A.C, 8.63′ etc. The columns of the portico are very ancient. Beneath the echinus they have a gorge decorated by leaves. Opisthodome. No rear pronaos. The edifice was certainly built in the 6 th century, and appears to have been thoroughly restored much later. The entablature was then entirely rebuilt, except the lower part of the architrave. This architrave is in two courses; it has drops under the triglyphs, and it is separated from the frieze by a double moulding. I The triglyphs are formed of slabs inserted in the frieze. I This terminates at the angles with a part of a metope. The cornice is without mutules. The cornice has an abnormal projection. Its soffit is decorated by coffers that are repeated on the raking cornices of the pediment. These arrangements foreign to Grecian architecture permit one to recognize a restoration in the Roman period in the entire portion of the entablature above the lower course of the architrave.

The arrangement presented by the pronaos remains uncertain. The actual condition suggested to Lagardette and to Labrouste two very different restorations. Before the entrance of the cella are columns with 24 flutes and bases, whose capitals have not been found; it is not known to what order they belonged. It is possible that they date from the late restoration, and that the entire front portion of the building may have then received a new arrangement. In any case, there was never a rear pronaos.

Pls. XXVI,9-12; XLVII,14; XLVIII; XLIX,9; L,11; Figs. 210, 215, 223.

Temples at Selinonte. F. 6; C. 14 columns. F. Intercolumniations, 14.43, 14.63, 15.15, 14.63, 14.43′. E.A.C. 14.75, 15.1′ etc. Cella very narrow. lateral porticos have nearly the width of those of the pseudodipteral. No rear pronaos. Metopes sculptured on the frieze of the facade.

Pls. XVI; XXIV,5,10,19,20; XXXVI; XXXVII; XXXVIII; XLI,6; XLVII,23; XLVIII; XLIX;10; Figs. 219, 228, 234.

Temple T at Selinonte. F. 8; C. 17 columns, according to Hittorf, 16 according to Courtepee. In the interior are two rows of 10 columns according to Hittorf, 9 according to Courtepee (Fig. 264). This temple is one of the largest that the ancients built, and may perhaps be regarded as pseudodipteral. Its wide porticos place at the service of the public an area of 27,960 sq. ft. The edifice measured with the substructore is 392′ long by 175′ wide. Pronaos enclosed by 3 columns on three sides. Rear pronaos. Construction dates from two epochs. The facade is the oldest part and is contemporaneous with temples C and D. The construction seems to have been interrupted, then resumed in the 5 th century, when temple R was built. Very marked differences distinguish the columns of the principal facade, of the lateral facades and of the pronaos from those of the rear facade anf of the rear pronaos.

Pls. XVII; XXXII,5-9; XLVII,11; XLVIII; XLIX,11; L,13; Figs. 232, 264.

So called temple of Poseidon at Paestum. Facade intercolumniations; 14.2; 14.64; 14.64; 14.64; 14.2′.

Sides; intercolumniations at angles 13.9′; others 14.25′. Number of columns of portico 6 × 11. Interior, 2 rows of 7

columns. This is the sole temple where still exist and are partly preserved the two orders superposed in the interior of the cella. A round hole of small depth indicates the places of the drops on the mutules.

The ceiling of the cella was at a higher level than that of the portico. There can be no doubt on that point; this results from the examination of the remaining parts of the edifice. One will later see in temples of the same arrangement, but of a later epoch, that the carpentry of the roof a and of the ceilings could form the same entirety; the proportions adopted have led to establish the ceiling between the tiebeams of the carpentry of the roof, and even rigorously all ceilings of the temple might have been at the same height. This is a hypothesis not beyond all probability; but as the temple of Paestum is the only one in which the internal colonnade remains, this conjacture can receive no direct confirmation. Besides, the system that we have adopted for the restoration of the carpentry of Paestum, may also have been applied to these less ancient temples; There is no improbability in assuming this. It is what we shall show later, particularly in relation to the temple of Zeus at Olympia. According to the restoration presented by the German architects, the cella, its floor being raised with regard to that of the portico, would be that of all parts of the temple having the least height.

Pls. V; VII,3; XIV; XXI,1; XXIV,7,9; XXVIII; XXIX; XXXII, 10; XXXIII,7-9; XXXIX,2; XLI,9; XL,3; XLVII,19; XLVIII;XLIX, 12; L,14; Figs. 156, 181, 185, 200, 205, 206, 208, 217, 225, 229, 231, 233, 24,, 246, 255.

So called temple of Hercules at Agrigente. The most ancient of the temples of Agrigente (Fig. 265); may have been built soon after the founding of the city (580). F. 6; C. 14 columns according to Cockerell, 15 according to Durm. 24 flutes. On the capital the profile of the echinus forms an angle of 45 degrees.

Entablature high and heavy. pronaos in front and rear. Cella narrow and long. Pls. XV; XLIX,13; L,15.

Houel, Voyage pittoresque. Vol. GV, pl. 218. Antiquities of Athens and other places in Greece. 1830, Pl. 9. (Cockerell Serra di Falco. Vol. III, pls. 15-19. Hittorf. pl. 21,5.

Note 1.p.597. Names by which are designated the temples. 1, Zeus Polieus (in the midst of the structures of the modern city of Girgenti). 2, Demeter and Kore. Hera Lacinia. 4. Concord. 5. Hercules. 6. Asclepios. 7. Zeus Olympios. 8. Castor and Pollux. 9. Hephaestos.

Old temple of Athena on the Acropolis of Athens. F. 6; C, 12 columns. Intercolumniations, 12.25;15.15; 15.15; 15.15; 12.25'. 20 flutes. The building rests on a single step. Front and rear pronaos. The cella presents a very abnormal aerangement; it is divided in depth into three parts. First comes the naos properly so called, divided into thre aisles, Pl. XXX, C; it had one internal order. Behind are two rooms separated by a hall placed on the axis itself of the building (D and E). Beyond these chambers is an opisthodome, a large hall (F). The statue of the goddess was placed in the central aisle of the naos (C). The other rooms 'D, E, F) served as storerooms; until the completion of the Parthenon, they contained the treasures of Athena. This is the edifice known under the name of Hecatompedon in the 6 th and beginning of the 5 th centuries. Only the foundations remained at the time when the exacavations were made, that laid bare the rock of the Acropolis. Some architectural members were found in place in those excavations; others had been again employed as materials in the enclosing walls of the Acropolis. The cornice was of marble; marble tiles covered the edifice.

To Dörpfeld is due the honor of having uncovered this edifice, and of having brought to light the important part that it played on the Acropolis of Pisistratus. The ideas that he has expressed on this subject have aroused enough controversy, that it is proper to give the list of the principal studies in which the questions have been discussed. There can be no doubts on but two points. Was the temple repaired and restored after the second Median war? Did it remain after t the erection of the Erechtheum?

Dörpfeld, der alte Athena Tempel auf der Akropolis (Athen. Mitt. 1886, p. 337-351; 1887, p. 25-61, 190-211; 1890, p. 420-439; 1897, p. 159-178). E. Petersen in the same, 1887, p. 62-72. Ant. Denkm. I, pls. 1, 2. Penrose, Principles of Athenian Architecture. 1888. p. 5-6, pl. XLVI. Also see objection in an Article on the ancient Parthenon, Jour. Hell.

Studies. 1891, p. 291-296. E. Curtius accepts the ideas of Dörpfeld (Die Stadtgeschichte von Athen. 1891. p. 71-74).

Plates XIV; XIX; XLVII,4; XLVIII.

So called temple of Athena (?) at Syracuse, now cathedral of S. Maria. If this temple be partly preserved, this is because after the fall of paganism it was changed into a church. There remain 22 columns still standing and supporting the architrave, 9 at the south and 12 at the north sides, 1 on the rear facade; they are engaged in the walls of the church. T The alterations required by this change of purpose no longer permit the establishment of the entire plan of the Greek edifice. F. 6, C. 14 or 15 columns. 20 flutes. The cella was long with a pronaos in antes. The columns are set close together; they sensibly diminish upward; the entasis is there scarcely noticed. The cornice has everywhere disappeared from the entablature. Where some parts of the frieze remain, the triglyphs are narrow.

Houel, Voy. Pitt. III, pls. 194, 195. Serra di Falco, IV, pls. 5-8. Cavallari-Holm, p. 176, 177; 382-384. Pl. L,6.

Temple of Apollo at Delphi. Built by the Alcmeonides between 538 and 515. As contractors, they were charged with the construction, in view of which and by collections made for 10 years in the entire Greek world and among the lovers of the Greeks, like Amasis, the council of the Amphictyons had gathered 300 talents, about $365,625. (Herodotus. II, 180). The architect was Spintharos of Corinth.(Pausanias, X, 5-13). The Bull. corr. Hell. (1896, p. 641-654) contains a note in which Homolle summarizes all that the recent excavations have informed the explorers concerning the construction, arrangement and ornamentation of the edifice; but this information is reduced to very little; the temple of the 6 th century appears to have been almost completely rebuilt in the 4 th century, either as the result of a fire, or rather after the earthquake, that destroyed the substructures. There remains from the primitive edifice very few remnants, which have been utilized as materials, either in the substructures of the new temple or in various fills.

The terrace works were executed before founding the temple and were veey important; one can compare them to those undertaken in the succeeding century on the south slope of the A

Acropolis in order to prepare the esplanade on which rose t the Parthenon. There remains of that effort the polygonal wall, a considerable monument (Fig. 151). Among the rare fragments that it is believed can be attributed to the temple of Spintharos are some of tufa and some of marble; thus is confirmed the statement of Herodotus, according to uhich t the Alcmeonides employed Parian for "the front part," doubtless that they were compelled to do so by their contract(V, 63). Men rarely employed marble until then except for sculpture; it was not without surprise and admiration that they saw the architect of the Alcmeonides use it in their construction; laborious efforts and heavy expenses were necessary to transport from Paros to Delphi all those blocks of marble.

By a series of calculations based on measuring the fragments of the few remaining triglyphs and metopes, it is believed that the dimensions of the temple were fixed in an entirely approximate manner. Measured on the stylobate, it was about 190 ft. long by 75.5 ft. wide, dimensions sensibly equal to those of the rebuilt temple. As to the internal arrangement, nothing could be known.

The columns were made of drums cut from fine and close grained tufa, that received inly a very this coating composed of several coats of milk of lime. These drums averaged 1.97 to 2.03 ft. high, had 20 flutes, and a diameter varying from 4.36 to 5.54′. A fragment of a capital was found, which permits a restoration of it. It frankly has the profile of the 6 th century, the high abacus, a very flat echinus with a strongly rounded edge. The architrave was in two courses in height. There were found two fragments in Parian marble of the fillet crowning it and that bore the drops. The lower c block has disappeared, those great blocks of marble having been recut for other purposes; but is has been found in tufa. Comparison of the marble fillet and the architrave of tufa gives for the total height of the architrave 4.36 ft. There is a piece of a triglyph of white marble; the height of this member must be 4.53 ft. By the examination of the mutules, one recognizes two types of triglyphs, one 2.72 and the other 2.95 ft. wide. The intercolumniations were not all equal. Two lions' heads, designed to serve as spouts, present characteristics of archaic art. From a fragment of a moulding that c

came from the tympanum, one can deduce the inclination of t the pediment. The ratio of height to length of it was 1:8.64. The covering was of marble in great flat slabs raised at the edges to facilitate the flow of the water and to receive the covers of the joints, that were made of the same material. A winged and flying Nike of white marble, several fragments of which have been collected, played the part of acroteria, as at Egina (Pl. VII, A).

On the evidence of Pausanias (X, 19-3), there were statues in the pediment; it is thought that the remains were found in the fragments of two series of figures, not wrought on the back, some of which are of marble and others of tufa, which accords with the statement of Herodotus. Euripides describes the groups seen by the chorus supposed to walk before the p principal front of the temple (Ion. Verses 190-219): "Observe," says the chorus, "the defeat of the giants on the stone wall." Did this refer to paintings that covered the walls of the c cell beneath the portico? To sculptured metopes? And if this description must be applied to metopes, are the metopes those of the portico below the pediment, or indeed the metopes of the frieze of the pronaos, that were decorated as on temple R at Selinonte? (Pl. XXXVII). It does not appear that the excavations furnished any element that permits the solution of this problem.

So called temple of Themis at Rhamnus. A small ante temple. The column has 5 1/2 diameters in height, and the profile of the capital is still flatter. Made of blocks of Pentelican marble, the wall of the cella is of polygonal masonry; at l least that part of the edifice appears to precede the Median wars. Very near this monument is found a peripteral temple of small dimensions, but entirely of marble, which is known under the name of temple of Nemesis (Pl. XV). Judging from the forms and proportions of its architecture, the latter edifice would be later than the Parthenon. It is probable that these two edifices were both consecrated to Nemesis; that the peripteral temple replaced the old chapel in the second half of the 5 th century. The sole reason for believing that Themis had a temple at Rhamnus is the fact, that the name of that goddess was found there engraved on the bases of statues, but Pausanias did not see the temple of Themis at Rhamnus, and it

seems probable from the text of the inscriptions, that Themis was honored there only as the "paredre" of Nemesis. (Ephemeris. 1891, p. 52, 53).

Temple of Athena at Ægina. Facade nith sensibly equal intercolumniations. F. 6, C. 12 columns. It is the only archaic temple within our knowledge, where the tympanum of the pediment was filled by figures in the round. It has retained important elements of the decoration of the roof; like the acroteria of the apex and of the angles of the pediment.

Pls. VII,A,B,C,8; XIV; XXI,9; XXVII,2-6; XL,16; XLII, 2,6, 7; XLIII; XLV; XLVII,5; XLVIII; XLIX,14; L,15; Figs. 169, 233, 254, 255.

Temple R at Selinonte. Date in the first half of the 5 th century; if we mention it here, it is because, that for what concerns the place assigned to sculpture in the decoration of the temple, that the arrangement of the columns of the portico with regard to the area of the cella, this temple has useful points for comparison.

F. 6, C. 15 columns. 20 flutes. F. Intercolumniations. 14.6; 15.25; 15.45; 15.25;14.6ft. Small diminution of shaft. Front and rear pronaos. Opisthodome. Sculptured metopes on internal frieze of each pronaos; perhaps the most ancient example of that arrangement.

Pls. XV; XXI,5; XXXI; XXXII,14; XXXIII,1-5; XXXVII; XL,1; XLI,11,14; XLII,17; XLIV,1-4,12,13; XLV; XLVII,27; XLIX,19; L,22. Fig. 231.

Temple of Segeste. This temple appears to belong to the second half of the 5 th century; but it has servedus to show ho far the pteroma was independent of the naos (p. 359). By this means it has found a place in this list. The edifice never having been finished, the columns of the pteroma are all standing and are without flutes. The capital also presents a very firm profile. The proportions of the entablature and of the pediment are very happy. Of the walls of the cella remain only some trecas of the foundations; it is a question if that cella was built (Fig. 266). F. Intercolucniations. 13.5; 13.73; 14.25; 13.73; 13.5 ft. C.S.A. 13.5; 13.73; 14.2; 14.3 ft. etc.

Plas. XXIX,3; XLI,1,2,3; XLII,14; XLVI,22; L,27;Figs. 180, 255.

* Temple of Apollo Pythios at Gortyna. This edifice merits mention, as the sole monument of religious architecture so far studied and recognized in Crete. According to the drawings of Halbherr, at the origin it was composed only of a great and nearly square hall, measuring 47.4 × 53.5 ft. in the clear. A door pierced in the eastern wall gave access to this hall. All that can be said in regard to the date of that structure is, that et certainly preceded the first half of the 7 th century; on the walls of the cella are engraved inscriptions; according to Comparetti, the most ancient belong to the time between 650 and 600. What further gives that part of the edifice a character of high antiquity is, that there has been found at the right of the entrance sumps intended to receive libations, and which are called escharai. We have found these sumps in buildings of the Mycenaean age. The custom was retained in the course of the classical age in certain temples, such as that of the Cabiris at Samothrace, in Beotia, and the Asclepion of Athens (Histoire de l'Art. Vol. VI. p. 283, 284, 323, 343, 571; Vol. VII, p. 60, Note 2.

About the third century, to place the edifice in harmony with the taste of the time, a pronaos 19.7′ deep was added to it, closed in front by a wall decorated by 6 engaged columns of the Doric style surmounted by a pediment. This pronaos was entered by a door opening opposite that of the naos.

Halbherr, Relazione sugli scavi del tempio d'Apollo Pytnio in Gortyna, with illustrations in the text and five pls. (Mon. Antich. Etc. Vol. I, 1889, p. 10-38).

Basilica or great portico of Paestum. In the study that we have made of the Doric column, we have had to take into account the peculiarities presented by the column and capital of that edifice, the oldest at Paestum; but we do not believe that it ever was a temple. (p. 560, Note 1). Thus in the chapter devoted to civil architecture, we shall give its plan, and shall seek to divine its purpose.

Pls. XXV,3; XXVI, 1-8; XXXII, 1-4; XLVII,12; XLVIII; L,31. Fig. 214.

Chapter IY. RELIGIOUS ARCHITECTURE.

The Ionic Style.

1. The General Arrangement of the Ionic Temple.

When the historian seeks to go back to the origins of the Ionic order and to follow it in its evolution, he does not dispose of the same resources as for the Doric order. Time has not [redacted] spared for his benefit an edifice, from which he can expect revelations having the importance of those availing him from the excavation of the temple of Hera at Olympia. Nowhere in the entire extent of the ground that he proposes to explore does he find a monument, that renders it the service of being in some sort present at the birth of a style, and of an entire system of art. The primitive type escapes his researches; the starting point is lacking for him, and he is no longer able to reestablish the entire series of successive creations of this architecture. Yet this produced in Asia Minor and the adjacent islands, edifices of very great dimensions and richly decorated, such as the first temple of Artemis at Ephesus and the temple of Hera at Samos. There exist notable remains of those buildings; if the ruins had been uncovered by systematic excavations, one would know the arrangement and appearance of the edifices, that the Ionian race built in its days of power and glory. This satisfaction was not afforded to archaeologists, and for Ephesus at least, they must renounce it forever. The excavations of Wood were executed from 1863 to 1870, and were as badly directed as expensive; scarcely in uncovering enormous masses of rubbish, have they ended by uncovering some of the arrangements of the second temple, that constructed under the successors of Alexander. As for the old temple, that destroyed by the torch of Erostrates, Wood has reported curious fragments; but no effort was made to restore its plan, when with more experience and care, he might perhaps have followed the main lines among the foundations of the later edifice. It is now too late; the ground has been thoroughly overturned; it would be wasted labor to seek features that the pick of the excavator has confused and effaced at his pleasure.

It is otherwise at Samos. There remain 12 drums and one column, and although the positions of some have been disturbed they yet stand in place; the lower part of the capital that

surmounted it, has been recorded in the rubbish beside it. Most of the bases of the colonnade and the pavement are still in place, concealed under the vines that cover the area formerly occupied by the cella and the portico.[1] This is proved by some pits dug in haste; but the excavations were not sufficiently deep or extensive enough, for one to know at p present with relation to the whole, the part played by those elements of the arrangement appearing at the bottom of the trenches. The partial reports offered lead to several interpretations; the temple indeed seems to have been peripteral dipteral with 8 columns in front;[2] but it is impossible to restore with some certainty the plan of this vast edifice on such incomplete data.

Note 1.p.604. On the ruins of the Heraion, see Tournefort, Relation d'un voyage du Levant. 1717. Vol. I, p.420-422.

R. Pococke. A description of the East. 1745. Vol. II, p. 28, 42.

Choiseul-Gouffier. Voyage pittoresque de la Grece. 1782. Vol. I. p. 100 and pl. LIV (the plan contained that plate is that of Pococke).

Antiquities of Ionia. 1821. p.64-67. Pls. II, III, IV, V, VI and Chap. V.

J. Giraud. L'Heraion de Samos (Bull. Corr. Hell. 1880. p. 373-394 and pl. XII) with a partial plan.

Dörpfeld. The same. p. 261-270.

Note 2.p.604. Dörpfeld informs me that K. Humann made excavations at Samos, in the course of which he recovered the p positions of 8 columns of the facade. The plan on which he placed them existed among the papers of the late architect Strack, at whose account the works were executed.

In the ruins of Neandria, a little city of Eolia on the Tchidri-d.gh, not far from the site where was to rise later Alexandria Troas, was recently discovered an edifice of the Ionic style, which would date from the 7 th century, according to the learned architect making the excavations.[1] This edifice is composed of a simple cella resting on substructures projecting at the four sides. It had neither pronaos nor opisthodome; a row of columns divided the interior into two aisles of sensibly equal width (Pl. LI); the threshold was at the level of the ground around it; thus no stylobate or

steps facilitated access to the interior. Was there an external colonnade? Men are not in accord on that subject. Koldewey denies the existence of this colonnade;[2] Dörpfeld would incline to admit it after the examination, that he made of the state of the place and of the fragments recovered; he would believe in a portico, whose supports were very near the wall of the cella.[3] We reproduce the restored plan, that he has courteously communicated to us below the plan of Koldewey (Pl. LI). There is another point on which a question can be asked. Is it certain that this edifice was a temple? No doubt in that respect, if one adopts the restoration of Dörpfeld. Some uncertainty would be permitted with that of Koldewey. By its internal arrangement, the edifice would recall the markets of Assos, Pergamos and Athens, as well as the naval arsenal of the last city. Yet it is to be noted t that in the spacious halls that served for covered markets, the entrance nas nearly always on one of the longer sides, while it here appears to be found on one of the facades. Further, the same arrangment is found in another Ionic edifice, whose religious purpose cannot be disputed, in the old temple of Locres, and perhaps it is necessary to see in this division of the cella into two similar aisles, one of the oldest arrangements of the Ionic temple, an arrangement that after having been tried in various places, was abandoned early, f for the inconveniences that it presented.[4] On entering the temple, one ran against a column that barred the passage and view; the colonnade concealed the statue placed at the back of the sanctuary, or compelled the placing of two statues, one in each aisle. Then we believe that a temple must be r recognized in the muilding of Neandria; but we are not decided as to the true character of the plan, and the edifice is further of small dimensions. It is not that sort of a chapel, that will permit us to restore the type, that under other c conditions, Ephesus and Samos might have shown us, that of the great entireties created by the art of Ionia at the time of its full development.

Note 1.p.605. Neandria. 51e Program zum Winckelmannsfeste der archaeologischen Gesellschaft in Berlin, by Robert Koldewey. 49 pp, 1 map and ills. in the text. Berlin. 1891.

Note 2.p.605. The same. p. 30-31.

Note 3.p.605. Letter of Dörpfeld of Oct. 13, 1895.

Note 4.p.605. Koldewey. Neandria. p. 44-45.

These entireties being destroyed or still buried in the e earth, it is necessary for us to cross the Egean sea and come down to the Attic temples of the 5 th century to meet with edifices of the Ionic style, whose plans are clearly read on the ground, and whose structure exists in full or in part. These monuments are still for the new order, thus that best give us the idea of methods that must have been taken from the beginning by the architects, whose works offer the first models of this art and founded its traditions. It is for that reason that we have now presented the plans of the Erechtheum, of the temple of the Wingless Victory, and of a temple now destroyed, that was still seen in the last century on the o banks of the Illissos (Pl. LII).[1] If suffices to glance at it to show that these plans present very curious peculiarities.

Note 1.p.606. The plan of the temple of Illissos is borrowed from Stuart. Antiqs. of Athense I. p.27-31, pl. VII.

Of these three edifices, the Erechtheum was most important; then to it will be chiefly devoted the examination. At first, one notes that there the internal area comprised between the walls does not have the proportions of the Doric cella; it is not narrow and deep like that; it is short and wide. The wall of the facade is pierced by a doorway, but that is not the principal doorway. In the lateral walls open two doorways, one of which on the north being that, whose rich decoration is so generally admired. Thus the sanctuary is accessible on three sides, while in the Doric temple, there was only one entrance, the simple opening that connected the naos and its vestibule, the pronaos with its two columns and two antes. Here is no pronaos. The doorways open directly on t the porticos, for at the Erechtheum is no continuous colonnade surrounding the entire edifice. What replaces this colonnade is three portocos, each differing from the two others in arrangement as well as by the height and form of its supports. Before the principal facade 6 columns stand in a row; on the opposite facade are 4 half columns attached to the wall; there are again 6 columns at the northwest angle, w with only 4 in front; at the south is the famous porch of t the cariatides, where are no longer fluted shafts, but stat-

statues of noble and proud canephores, charged with supporting the weight of the entablature.

The analytic study of this complicated plan alone sufficiently emphasizes one of the characteristics, by which the I Ionic temple is defined at its origin. It does not have the austere simplicity of the Doric temple; it was not born like that with fixed forms, forever determined by the imitation of the Mycenaean megaron; it was not born with that beautiful girdle of columns, that the architect clasped around the sides of his edifice, when from the royal house he made the august dwelling of the immortal gods. In the entire arrangement of the various parts composing it, the Ionic temple has something looser, more irregular and more capricious; it comprises additions and varied appendages, for which if the architect had attempted, he cannot have found an appropriate place in the Doric temple.

However small the edifice, the plan of the temple of Wingless Victory is no less significant; the original character of the Ionic temple is no less clearly marked there. We find there the arrangement termed amphiprostyle, the temple with four columns on each front and rear facade. As for the cella, it is nearly square.

The temple on the Illissos is also amphiprostyle; but the plan there approaches more nearly to that familiar to us. As in the Doric temple, the cella is preceded by a pronaos with walls terminated by antes. With that edifice is seen to commence a movement of assimilation henceforth pursued without interruption under the victorious ascendant of the Doric style and for its benefit. The arrangements suitable for the Doric temple were gradually imposed on the Ionic temple. It became peripteral; it had its pronaos and opisthodome. Henceforth the edifices belonging to either order were only distinguished by the type of the supports, by the composition of mouldings of the entablature. After the 4 th century is scarcely anything of Ionic in the temple bearing that name, but the column with the special form characterizing it, and the frieze with its continuous treatment, where is wanting the rhythm of the triglyphs. This is what we desired to demonstrate, when on the same plate and opposite the temple of Neandria and the temples of the Acropolis, we have represen-

represented the temple of Athena at Priene, one of the most elaborate works of the architects of the Hellenistic period. (Pl. LIV. By consulting onlyiits plan, one cannot tell to w what order the edifice belongs; this plan is that of the Doric temples of Sunium, Rhamnus and Nemea (Pl. XV). As men aim more at luxury and effect, they will multiply the number of columns; these will be doubled on the sides and on the principal facades; but the type will no less remain the same always, a copy of the Doric type, for that is the general arrangement.

To judge of it by the Attic types, where the architect seems to have remained faithful to the spirit of Ionian archaism, what on the soil of Asian Greece and of the adjacent i islands constituted the Ionic temple in the most ancient times, would have been a naos of moderate size; if one must c believe Koldewey, there was nothing else on Neandria. Porticos can be applied against all or a part of the wall of that cella to vary its appearance and decorate the entrance; but these porticos were never more than frontispieces, to which the caprice of the constructor assigned one place rather than another, according to the case. No absolute law controlled the arrangement of the supports in the external additions; no rule like that of 6 columns for the facade determined the number. The temple increased with the importance of the cities that erected it and with progress made in the art of building; but Ionic arrangements,no less continued to retain freer charms than those of the Doric order. They did not even depart from it when the Athens of Pericles decided to ornament its renewed and restored Acropolis by Ionic monuments; how would one explain otherwise what the charming grace of those light edifices has of the unexpected and even irrational? It was only in the course of the succeeding century, that Ionic art ended by renouncing this freedom. The ancient dialects of the Grecian idiom, formerly separated by such decided differences, tended to disappear; everywhere men commenced to speak and especially to write the same language, that which is termed the common language. A phenomenon of the same kind was then produced in the domains of sculpture; if the dialects of the art did not come to be confused, that preserved the precision of the forms that they impressed on the ma-

material, at least all that approached each other and interpreted each other. By this cause they lost something of their vitality. The Doric style was then almost abandoned for the benefit of its rival; but before falling into desuetude, it faded to Ionic, of one can so speak. As practised by the architects of the Macedonian age, that is no longer more th than a sort of eclectic compromise between the two systems, formerly so profoundly original, that were born in different surroundings, and nere each developed in its own way with entire independence for several centuries.

Even when there is accomplished this sort of fusion, the Ionic allows its arrangements to occupy more space and be m more complex, than the Doric arrangemen.s; it contracts them less; it freely multiplies there the supports; it enlarges the intervals that elsewhere remain narrower. It is only when one finds in it the type known under the name of dipteral ((Pl. XXX,13), and if we have found in the Doric temples of Sicily (Pl. XVII) a certain plan, that approaches that of t the pseudodipteral (Pl. XXX,12), in the Ionic temples alone has that arrangement been fully realized, such as Vitruvius defined it. Finally, the Ionic alone extended the number of columns on the facade to 10 or 12; only it with its derivative, the Corinthian, furnishes examples of the decastyle and of the dodecastyle temple.[1]

Note 1.p.610. One finds for citing in the Doric style only one example of an arrangement of this kind; this is the dodecastyle portico that Philon added to the great hall of initiations at Eleusis; but that portico is of juite late date (311), and is otherwise only a sort of facing. The hall of initiations was not a temple, properly speaking.

Before beginning the study of the forms of the Ionic order and of the elevations that they form, it is proper, as we have done for the Doric order, to define the Figs. that we have grouped on the Plate, which is intended to give an idea of the general character of the Ionic order.

Explanation of Plate X.

A to E, architectural members of the ancient temple of Ephesus. A, B, base and lower part of the shaft of the column. C, capital of the same column in elevation. D, side elevation of the capital. E, plan of the capital. After large scale drawings communicated to us by M. A. S. Murray. Reductions

from these drawings were given at the close of his Article; The sculptured columns of the temple of Diana at Ephesus, in Jour. Roy. Inst. Brit. Architects. Vol. III, No. 2.

I. Angular and perspective view of the temple of Wingless Victory, restored after the drawing of Landron(Voyage archaeologique de Le Bas. Architecture. Athens. Pls. 2 to 8.

II. Coffers of the ceiling of the same temple(The same, pl.4)

III. Entablature with architrave of a rock-cut tomb at Telmissos. Architrave with two facias. Cornice with modillions. Perspective view after geometrical drawings of Texier. Description de l'Asie mineure, Pl. 171.

IV. Entablature of temple of Athena Polias at Priene. Perspective after geometrical drawings of Thomas. (Rayet & Thomas. Milet et le golfe Latmique. 1877; pl. 13). Architrave with 3 fascias. Cornice without modillions.

V. Entablature of Erectheum. Architrave with 3 fascias. C Cornice without modillions.

VI. Roofing tiles of the temple of Neandria. Perspective after Figs. 66, 67, of Koldewey. Neandria.

2. The Columns.

What is first striking on the Ionic edifice, even on that where is most marked the effect of influences slowly acting, is the character of the column. Everywhere, as well on the colossal temples built under the Seleucides and under the Romans, as on those old and venerable edifices on whose plinths are read the names of the half legendary kings of Lydia, the Ionic column always with a bearing and appearance that distinguish it from the Doric column at the first view. Three traits especially contribute to give it that very peculiar appearance; it always rests on a base; its shaft is more slender than that of the Doric column, and is dimensioned less; those beautiful curves termed volutes never fail to ornament the capital; finally, the upper surface of that is always r rectangular, while on the Doric order that surface is always s square, which changes the mode of harmonizing the top of the shaft with the capital.

One is accustomed to present as the most excellent type of the Ionic column, that of the Attic monuments of the 5 th c century. Doubtless among all the columns that belong to that order, there is none that satisfies the artist as well as t

that of the Propyleum or of the Erechtheum, that has such a happy proportion, offers such pure lines, and whose capital is so elegantly ornamented; but the art that it represents did not succeed at the first stroke in producing this masterpiece. This was preceded by numerous experiments, each of which has rendered service, either by the advance that it marked beyond previous creations, or by its defects themselves, soon perceived anf corrected by a taste always on the watch. Of these preliminary sketches, most have perished; yet recently have been found a certain number, that have presented forms, whose strange variety has not failed to cause surprise. In current opinion, one of the distinctive characteristics of the Ionic column is the section of its flutes, which are not tangent to each other as on the Doric column; but are separated by a narrow fillet (Fig. 267); this is not the form presented by the flutes on the most ancient Ionic columns; they are similar there to the Doric flutes. Elswhere the shaft remained smooth. It is the same for the base; according to the edifices, it presents very different profiles. As for the volutes, how much time and experiment have been necessary for them to learn to regulate the design and make the connection! There is the only one method to follow if one desires to form an idea of the gradual formation of the type; that is to s.udy it in its different states, as the engravers say, i.e., in all the monuments of the archaic epoch from which remain fragments that permit its column to be restored, either entirely or in part. One sometimes has the capital without the base, or the base without the capital; but even then, the attentive examination of that one of the elements of that entirety, which has not perished allows still a safe inference.

The most ancient column of a temple that can be restored in its integrity is that of the old temple of Ephesus, which was built about 560 with the aid of Croesus, as Herodotus r relates, an assertion confirmed by the remains of an inscription engraved on one of the bases.[1] This advantage is due to the intelligent zeal of A. Murray, the curator of the Greco-Roman department of the British Museum; to appreciate at their just value the patience anf sagacity displayed by Murray in that difficult work, it was necessary to have seen in the

itself ten years since, in the storerooms the remains of the first temple that Wood had brought; I should have believed it impossible ever to utilize them. Pliny mentions as one of the peculiarities that distinguished the second temple of Ephesus, the fact that 36 of its columns were "sculptured",[2] a statement that has greatly embarrassed the commentators, until the time when Wood's excavations brought to light beautiful fragments of the reliefs in a grand style, which ornamented the lower drum of the columns in question. One would have thought that the idea of this unusual decoration properly belonged to Chesiphron and Metagenes, the architects of the second temple, and he would have attempted to explain it by the taste of the Macedonian age, by their desire of innovation at any cost, and by the pleasure found in the picturesque effect. However plausible that explanation might appear, it must be renounced. When the Ephesians undertook to repair the disaster caused by the folly of Erostratos, by the aid of subscriptions collected throughout all Greece, they certainly proposed to give to the new edifice a grandeur and magnificence that its predecessor could not have had; but they adhered to the reproduction of its principal arrangements, particularly of those forming its originality. That results from the study of the fragments of the first temple piece by piece, Murray restored a relief with figures; a young man and young women in long vestments, marched as in procession around a cylindrical shaft, that can only be the drum of a column; he had further recovered and fitted to the shaft a bit of moulding that surmounted this relief, and separated it f from the upper part of the support. Then one can no longer doubt that the archaic temple also had its sculptured columns, besides more simple columns. Were they in the same number as on the later edifice? No one knows; but they must have been much admired in their time, on account of the happy peculiarity of their ornamentation.

Note 1.p.612. Herodotus. I, 92. Histoire de l'Art. V, 303.

Note 2.p.612. Pliny. H. N. XXXVI, 95. Pliny adds two words after (sculptured", which the manuscripts gloss as "una scopa" But these words do not make sense. It has been proposed to read "una a scopa," (one to scopa), and this correction had been accepted by all editors; these seem to have forgotten

that the celebrated sculptor of the Mausoleum had died long before the rebuilding of the temple was commenced. One only lends to the wealthy, says the proverb; this was to attribute to Pliny an error in chronology, that would perhaps exceed the measure of the negligence and contempt to which he is a accustomed. Murray suggests another correction, that varies slightly more from the text of the manuscript, but which has the merit of giving a veey satisfactory text:- "imo scapo," on the base of the shaft.

Murray devoted himself to the reconstruction of one of those sculptored columns. Only little bits and thin pieces of each member of that whole were found; but some of those bits presented surfaces that fitted and permitted them to be joined; thus one had the profiles of the mouldings, the places and movement of the figures, the curves of the volute. In comparison with what was lacking, he possessed little; yet there was enough to guarantee the accuracy of all done in the work of restoration; not an element of any importance w was introduced arbitrarily and by mere hypothesis.

Judging from the fragments remaining, it does not seem t that on the old temple all the bases were exactly similar; there were slight differences between them, according to the places occupied.[1] What was chosen here as a support for the column is formed of two scotias separated by astragals and a great torus (Pl. X, A). The torus is fluted horizontally. Above this base, separated from it by a round and by a high band forming a plinth, rises the first drum of the shaft around which extends the circle of figures symetrically arranged and marching with timed steps (B). This drum of exceptional character has its crown, a projecting ring, whose profile is a reversed ogee decorated by a collar of descending lanceolate leaves, separated by the ornament termed spear head. Above is a smooth band from which commences the column, properly speaking. Like that of Samos, its contemporary, it must be very slender; but there are only two or three fragments of it; one is therefore not in position to determine its height. What one is able to prove is, that the shaft had 44 flutes, that touch at their edges as on the Doric column. Yet there is a difference. Take a drum whose diameter equals that of a Doric column with 16 or 24 flutes, and propose to

insert 44 or more on that perimeter whose length is the same as that of the first; you must make them smaller to find room for them. The closer together they are, the edges will make the column appear weaker than if the edges were farther apart. In the classical arrangement, by the semicircular form given to the section of the flutes and the insertion of the fillets, one will obtain sharp edges, and thus he succeeds in recovering that strength of the lines of shadow, which the multiplication of channels tends to reduce.

The capital rests on an astragal, a sort of projecting bead decorated by pearls, which plays here the part if the concave bands of the Doric order; above a row of eggs separate two volutes that join at top by a channec, whose lower edge describes a slightly rounded curve (C E). Where this meets the volutes, two little palmatiums mask the point of junction a and fill the angle by projecting above the eggs. This has been named sometimes the ear of the volute, as one terms the eye the centre of the spiral, the point where its last scroll stops. Analogies easily seen suggested the use of these terms. The two volutes extend entirely beyond the line forming the prolongation of the shaft. The inner face of the scroll does not cross that line, an arrangement that gives to the top a width that seems rather excessive. On these sides the capital presents the form of the cushion grooved by scotias analogous to those of the base, but grouped here in the vertical sense.

We likewise possess most of the elements of the column of Samos. There had existed at Samos a very ancient temple of Hera; the bases of its columns were found beneath those of the edifices whose ruins exist.[1] The rebuilding must have occurred at the time of the great prosperity of Samos, under Polycrates (532-521).[2] According to the character of the forms, the column of Samos seems later than that of Ephesus. Thus its base is a more happy arrangement that approaches more the classical type (Fig. 268). It consists of two principal members; a high scotia and above it is a torus somewhat lower. These two mouldings are ornamented by very numerous horizontal grooves. Fig. 269 represents another base with sensibly the same profile, but which differs from the first in that it terminates in a sort of inclined plinth, that ser-

serves as intermediary between the base and shaft. Fig. 270 gives the profile of the same bases after another drawing. This must be that of a column of the second row. As for the shaft, it was smooth (Fig. 271); this is shown by the column still standing in part, with numerous drums lying on the ground. As the flutes are wanting here, is that because the e edifice was not completed! One can scarcely believe this, when he recalls how rich and powerful Samos was in the 6 th century; there are other examples of ancient Ionic columns on which the flutes are lacking.

Note 1.p.615. Girard. Bulletin. 1880. p. 389.

Note 2.p.615. At the end of the tale of the adventures of Polycrates, Herodotus (III, 160) mentions the three great works that he admired at Samos. The temple of Hera (f II, 148), the dike of the port and the tunnel of Eupalinos cut beneath the mountain to give good water to the city. The temple must be one of those mentioned by Aristotle as an example of the great works, that the tyrants undertook to divert the people and cause them to forget their subjection. (Politics. V, II). On the tunnel of Eupalinos, see Fabricius, Altertümer auf der Insel Samos (Athen. Mitt. Vol. IX. p. 163-197, pls. 7, 8).

Note 1.p.617. The fragments of a volute gathered on this site and drawn do not appear to have belonged to the order that we are studying; they came from a much smaller building than that of our column. (Antiq. of Ionia. 2821. Chap. V. Pl. IV, 5).

The column was very slender. It doubtless lacks the upper part, but the lower diameter of the capital exists in a fragment found on the ground near the base, and on the 12 drums remaining in place, one can measure the gradual diminution of the shaft. From the top of the base to the beginning of the echinus this shaft had a height of 43.33 ft., nearly 8 diameters. The capital was composed of two pieces joined by superposition, as indicated by the hole cut to receive a dowel in the top of the echinus, the only part of the capital remaining (Fig. 272). That echinus having eggs on its entire perimeter, it results from this that the volutes must have been cut in a slab with upper part enlarged; they fall at both sides of the echinus without having any connection with

that.[1] There is reason to believe that they presented an arrangement analogous to what we found at Ephesus, but what remains od the capital of Samos suffices to prove that it had its originality. It exhibits a peculiarity not found at Ephesus. This is that we meet with the necking for the first t time, which we shall find again in the capital of the Erechtheum; it is bordered by two fillets at Samos.

To an edifice of much less importance, the temple of Apollo Napea in the island of Lesbos, that a column belonged, which although of small height, no less merits attention. Napea w was a small city, whose ruins have been recognized in the construction of a church dedicated to S. Taxiarchis.[2] According to all appearance, this column is more ancient than that of Samos and even that of Ephesus; all its members have been found; it may be almost entirely restored. The base is made of a great torus surmounted by a round (Fig. 273); the shaft is smooth (Fig. 274); but what is most singular is the capital (Pl. LII, 1).[3] The volutes are tangent at their springing; they rise vertically and the centre is outside the line of the shaft. At top is left between them a space filled and d decorated by a palmatium. The top of the capital presents a smooth surface; it is a rectangular slab having the diameter of the column as its width (1.57 ft..); the length is 2.89 ft. The whole is cut in a block of trachyte 4.46 ft. long; it presents the same design on both faces.

Note 2.p.617. Koldewey. Die antike Baureste der Insel Lesbos. 90 pp., ills. in text, 29 pls. and 2 maps. 1890.

Note 3.p.617. Pl. LII. 1; capital from the temple of Apollo Napea in perspective, after the geometrical drawing of Koldewey, Pl. XVI. 2; capital from Neandria, after the geometrical drawing of Koldewey. Neandria. Figs. 60, 61, 62. 3, 4; column from the most ancient temple of Apollo at Naucratis. From the geometrical drawing of F. Petrie. Naucratis. Part I, Pl. III. 5, 8; the second temple of Locres, after Dörpfeld. Röm. Mitt. 1890. 5; the base and bottom of the shaft. 6; profile of the same parts. 7; fragment of the volute. 8; fragment of the c capital.(Figs. 4, 7, 13, 14 of the description.

The column of Neandria is also entirely known to us. There has not been found the least trace of base, for one cannot thus term the blocks of stone sunk in the depth of an area

of tamped earth and on which rested the lower drum of the s shaft. The base that we have everywhere seen very developed in the oldest Ionic columns, was entirely wanting here.[1] There was something singular in that peculiarity, really unexpected. As for the shaft, it was smooth with a very marked diminution. Nearly all the drums have disappeared. After having been ruined by a fire, that one divines from the charcoal scattered over the ground, the edifice served as a quarry for the adjacent villages. The blocks that form the capitals for the most part have been recut in place, the projecting parts and ornaments in relief were broken off; these have remained lying on the ground. One of the best preserved pieces is that discovered in 1882 during a visit paid to the Tchidridagh by Clarke, an American architect, then occupied with the excavations of Assos (Fig. 275).[2] One of the two r volutes is complete. The motive being symmetrical, it is easy to restore the missing portion.

Note 1.p.618. Koldewey. Neandria. p. 32.

Note 2.p.618. Clarke. A protoionic capital from the site of Neandria, in Papers of the Archaeol. Inst. of America. 1 1886. And in Am. Jour. of Archaeology. II, 1886, p 1-20, 138-145. To preserve that fragment from destruction, Clarke deposited it in the farmhouse of Calvert at Aktche-Keui (Thymbra), whose hospitality has left grateful memories in all travelers, who have passed over the Troad in the second half of this ((19 th) century. Dörpfeld photographed it there, to whose c courtesy we owe this proof.

Neither European nor Asian Greece had ever produced anything similar. All that can be compared with it are certain c capitals represented on painted vases;[1] also some funerary steles found in Cyprus;[2] but other elements intervene there, and the capital was constructed on a rectangular plan. The capital of Neandria was the first where that arrangement was employed for a column, playing the part of a support in a building. This type then surprises and interests. By the elements composing it, it recalls the Ionic capital; it is distinguished from that by the manner in which the elements are grouped there; one finds there both a correspondence and a difference.

Note 1.p.621. Gerhardt. Auserlesene griechische Vasenbilder.

Pls. 108, 185, 241, 242.

Note 2.p.621. Histoire de l'Art. vol. III, Figs. 51,52,152.

Soon after the capital of Neandria had been mentioned, that of Napea was uncovered; that arrangement has been found more recently in a capital found at another point on the island of Lesbos, in the acropolis of Mitylene (Fig. 276).[3] In these three pieces is the same direction of the volutes, the same palmatium interposed between the two elements of the couple. The type is everywhere the same; there are only variations without importance between the two examples. Thus at Napea the eye of the volute is indicated by a round hole sunk in the blackish tufa, in which was perhaps inserted a stone of lighter color; at Neandria and at Mitylene, a round passes through the block. What is peculiar to the capital of Neandria is, that the terminal area is smaller than elsewhere. It is only 1.31 ft. long; this is very small in comparison to the total length of the block, which is 3.94 ft. The reason of this arrangement is easily seen; its object was to prevent all contact of the volutes and the beams supported by the capitals.

Note 3.p.621. All our thanks are due to M. Paton, who was willing to communicate to us this fragment by the intermediary of M. Salomon Reinach.

As on the two capitals of Lesbos, at Neandria on the lower face of the block is seen the hole in which fitted the dowel, that connected this piece to the shaft.

When Clarke made known the fragment that he had discovered on the site of Neandria, he had no doubt that these two volutes were connected to the shaft by some transition, fillets or astragal, and by themselves composed the entire capital. At the end of the excavations that he made on the site of the ancient city, Koldewey arrived at an entirely different conclusion. He found on the site of the temple many leaves cut on the pieces of volcanic stone, liparite, of which were made the drums and the volutes. The ends of these leaves had been detached by the chisel from the block of cylindrical form of the surface of which their contour fitted. By comparing and adjusting together all these fragments, Koldewey soon found the places and restored the profiles of the architectural member, of which they were the fragments. Two col-

collars of falling leaves set on a part of the quarter round and enclosed between narrow rings decorated the top of the shaft. Between these collars and their fillets were differences in details between the columns, but the entirety of the arrangement was everywhere the same. The motive recalled that of the lower portion of the capital of the column of Persepolis.[1] Now on that the volutes are superposed on a doubled motive in which is believed to be recognized the imitation of a plant form, the terminal leaves of the date palm, s some erect and others hanging against the trunk.[1] Why was n not the same on the capital of Neandria? What confirmed Koldewey in the conjecture suggested by that analogy was the m manner in which he understood the plan of the edifice; according to him there were no supports in the temple other than the 7 columns that divided the cella into two aisles, and t that supported its roof. Volutes and collars of leaves can then only be the conjugate elements of the same capital, the leaves serving to make a suitable transition from the nudity of the very slender shaft and the ample expansion of these wide volutes. Thus Koldewey was led to restore this capital as we reproduce it in perspective after one of the three examples that he presents (Pl. LII,2). We have dispensed with indicating in this drawing the fractures, he had to join in order to restore that entirety.

Note 1.p.622. Histoire de l'Art. Vol. V. Figs. 312-317.
Note 1.p.623. The same. Vol. V. Fig. 492.

However interesting may be this composite type, it also r retains a hypothetical character in a certain measure. Nowhere, neither at Neandria nor at Lesbos, has the block on which are cut the volutes been found in place set on a drum surrounded by leaves. So far as we know, there have not been collected fragments of those leaves at Lesbos near the pairs of abutting volutes. One further has the proof on certain archaic columns, that volutes strongly resembling those of Neandria and whose projection is as great, were set directly on the shaft with a simple astragal near the junction. (Pl. LIII,1).[2] Yet the hypothesis is imposed, if it be demonstrated that all the fragments of Neandria, leaves and volutes, belonged to one and the same order, that of the cella. But this is just what is called in question by another very com-

competent observer Dörpfeld, who inclines to believe that the temple was peritperal. According to him, there were two different orders in the temple of Neandria, and consequently two different types of capitals. The capital of the internal order was formed by the double collar of leaves, that which he places above the other is the highest and widest of the two, whose leaves are rounded and ascending at their lower part to allow their points to hang freely toward the ground, while in the lower part the same leaves are shorter and are attached to the shaft (Fig. 277). The superposition of these two crowns so placed formed a capital, although very simple, which has a very happy effect with its unique motive, that is repeated while diversified, and with the expansion of the upper part. This capital would have been that of the columns of the cella. Did the blocks in which were cut the abutting volutes belong to the columns of the external portico?

Note 2.p.623. Pl. LIII. 1; capital from Delos, perspective after geometrical drawings of Nenot. 2; plan of the same capital from the same. 3; capital from Delos after the same. 4; capital from the Acropolis of Athens, perspective after drawings of Borrmann. Ant. Denk. I, pl. 18. 5; capital from the Acropolis of Athens, persepctive from the same. Ant. Denk. I, pl. 29.

Here are the reasons that seem to justify this mode of seeing. On one face of the block the volutes are traced very summarily. On the other the chisel has carried the work as far as possible. Hollows and reliefs have been executed with final precision. Nothing more natural than this dissimilarity between the two faces, if one admits that the columns terminated by these capitals were placed in the gallery. There only one face of the capital was visible, that turned to the exterior; the motive can be left without inconvenience as o blocked out on the opposite face. It was entirely otherwise in the sanctuary itself, where one passed between the columns. There a cylindrical capital with the same appearance wherever the spectator stood, was more in place. In a small city of Aegae in Eolia has been found a capital, that is only a replica of that of Neandria;[1] all the difference is that in the capital of Neandria the crown of foliage is single instead of being double (Fig. 278). This order belonged to one of the

halls of the public market of the city. That edifice can scarcely be earlier than the 3 rd century B.C.; one has noted a sensible analogy between the buildings of Aegae and those that the Altalides built at Pergamon. At about that time, Aegae depended on Pergamon.[2]

Note 1.p.624. One may ask how the architect solved the problem of the capital of the angle column. Had he doubled there the pair of volutes, as Ionic art did later? The fragments discovered give no indication on that point.

Note 2.p.624. R. Bohn. Altertümer von Aegae, unter Mitwirkung von C. Schuchardt. 75 illustrations. 1889. (Second supplement of Jahrb.). p. 31-32, 65.

Another observation supports this hypothesis. In these cylinders, around which extends the double crown of leaves, Koldewey believes is recognized the lower part of the capital; if they had really fulfilled that function, they would have been connected by a dowel to the blocks on which were carved the volutes. Now as Dörpfeld attests, they do not present on their tops the least trace of such a fastening. The architrave rests on the capital without any intervening fastening to connect and maintain in place these two members.

The problem set by the discoveries made at Neandria has then received two contradictory solutions, between which we can not choose with full certainty, having not been present at the excavations and not having seen the monuments. Each one has its difficulties; in favor of each can be invoked special arguments. The capital entirely of leaves as Dörpfeld assumes, would return to the category of those basket capitals with leaves, whose tradition is preserved in even that part of Greece. On the other hand, it must be confessed and not without regret, that we should renounce the admission of that complex type that Koldewey presents as having been that of the capital of Neandria. This type is not alone curious by its singularity. The forms there found together combine without effort; the entirety with a certain archaic air that has its charm, does not lack richness and amplitude. Finally, what completes the giving of a high value to this capital is the striking resemblance, that it presents of those of the royal edifices of Persia and of Susiana. Except the bulls, which properly belong to oriental art, one will find here

the same elements as there distributed in the same order. T The monuments of the Achaemenides are later by perhaps two centuries than the temple of Neandria, and if the architects that constructed them suffered to a certain extent the influence of Hellenic art, one can only admit that they were inspired by forms, that had already passed out of fashion in Greece, when they erected the sumptuous palaces of Darius and Xerxes. This analogy remains no less worthy of attention. It is explained by the existence of an earlier type, very ancient and of Asian origin, a primordial type from which equally came by different ways the capital of Neandria and that of Persepolis.

Only in its froper place among the Greeks of Asia, have we so far studied the Ionic art. We now have to follow it beyond the sea into Sicily and Italy, as we have done for Doric art, born in peloponnessus. Some remains exist of one of the most ancient monuments, that it has created in a foreign land; we speak of the temple that the founders of Naucratis hastened to erect in honor of Apollo at the centre of the concession. This temple was entirely of limestone, and is believed to have been built about 620, perhaps earlier.[1] There again we have the order nearly entire; as at Samos it lacks the capital properly so called; only a bit of it exists. On certain columns that perhaps were in the second row, the lower part of the base presents elements analogous to those composing the Samian base, the round and fluted plinth, then the torus with the same horizontal flutes; but here between the torus and the bottom of the shaft is interposed a frustum of a cone terminated by a band above which commence the flutes of the shaft. (Pl. LII,3). The transition thus arranged between two members usually in direct contact is awkward and heavy; it seems that the architect working in a barbaric land has lost something of his refinement and taste, unless we have here a simple roughing intended to receive an ornament, that was n not executed. As at Ephesus, the shaft has yet only Doric f flutes; it ends with a sort of double astragal formed of two rings of leaves (Pl. LII,4); those are summarily indicated and resemble inverted eggs. It is not probable that the column was terminated thus, for there have been found some fragments of volutes cut in the same stone;[2] but these bits are

too small for one to attempt to restore the capital. One can ask whether this capital did not present an entirety analogous to that restored for Neandria (Pl. LII,2).

Note 1.p.628. On the subject of this temple, see Naucratis, Part I, 1884-1885 by W. M. F. Petrie, with Chaps. by Smith, E. Gardner, Barclay, V. Head. Third Memoir of Eg. Expl. Fund. 1886. Pls. III and XIV by Gardner, with an appendix by F. Ll. Griffith. Sixth Memoir of Eg. Expl. Fund. 1888.

Note 2.p.628. Naucratis, Part I, p. 13.

Naucratis is also only an extension of Ionia; but a recent discovery, the uncovering of the ruins of one of the temples of Locres on the eastern coast of Italy, has shown this style of architecture employed in a city not connected by any close bond to the country where it originated.[1] There on the site itself of a more ancient temple, from which remains only the foundations, was built a peripteral Ionic temple about the middle of the 5 th century; important fragments of the order have been found. The base much recalls that of Samos (Pl. LII, ,, 6); but one here sees the true Ionic flutes appear on the shaft, a shallow fluting with a fillet separated by narrow fillets. Flowers ornament the necking; they start in the curved angles forming semicircles in which the flutes end at t their upper ends, and they vary from one column to another. (Fig. 279). One has but a fragment of the capital itself ((Pl. LII, 7, 8).[2] However fractional these remains, one finds there that the little round outlining the spirals of the volutes does not form a continuous curve and is connected to the upper fillet by an obtuse angle, while below was a bent curve joining the two volutes. The cushion forming the lateral part of the capital offers ornamentation less elegant than at Ephesus; for all decoration it has only several superposed rows of scales. That arrangement is of a rather poor simplicity; but in other respects, by the profile of its base, by the section of its flutes, the order of Locres is already very advanced; it approaches the orders whose happy proportions and noble elegance have raised to the dignity if classical models.

Note 1.p.629. Petersen: Temple in Locri, in Arch. Inst. Röm. Mitt. 1890. p. 161-227. Pls. VIII, IX, X. The plan drawn by Dörpfeld was published at larger scale in Ant. Denk. I, Pl.

LI. Also see P. Orsi. Scoperta d'un tempio ionico, etc. (Not. d. scavi. 1890. p. 248-267).

Note 2.p.629. Fragments of a necking ornamented in the same taste have been found at Naucratis (vignette at end of Chap).

In the course of this survey, we have not met with the ruin of a single edifice, that presents the appearance of the temples of Paestum, or even that of those of Corinth and of Egina; neither in Asian Greece nor outside its frontiers have we found a single Ionic column still standing on its base a and surmounted by its capital. We have only endeavored with greater care to collect and represent all the fragments, which can give an idea of the character of the forms created a and employed by this architecture, in its initial period and up to the middle of the 5 th century. It remains for us to compare and classify the forms, to group them in series, and to follow the progress of the work, which from generation to generation made them more harmonious and more beautiful.

The temple of Neandria is certainly more ancient than the temples of Ephesus and of Samos; there are serious reasons for dating the construction in the 7 th century.[1] If this be so, the type with abutting volutes would represent the primitive form of the Ionic capital, and until being more fully informed, there would be reason to regard Eolia and its appendage Lesbos as the cradle of that art. In that region were made the first attempts, sketches and preludes of the future masterpiece. As the domain of that art extended, occasions multiplied to use it, to retouch and correct the motives that were first sketched, to reform or to inflect the lines of its design to better satisfy the eye. Taking outside Asia in the islands of the Archipelago and in continental Greece, a certain number of archaic capitals, that served as bases of statues, one sees the type gradually modified; he notes variations from one to another, slight changes in design, by t the effect of which the capital with abutting volutes is transformed into a capital with volutes connected by horizontal lines.

Note 1.p.630. Koldewey. Neandria. p. 49.

For example, here is a capital found at Delos (Pl. LIII,1, 2).[2] The volutes are only indicated here by lines traced with the point, lines formerly heightened by color; they present

in general nearly the same arrangement as at Neandria; but they are curtailed as not even joining at their beginning. They lie extended on the plateau, that has a rectangular surface at its upper part to follow their movement rounded at the sides. The top of the shaft is attached to the horizontal plane separating the two cylinders. An ornament painted like a palmatium fills the interval that separates the volutes. When one attempts to restore mentally the capital of the Samian Hera, he would be sufficiently disposed to believe that cylinders of this kind were suspended there at both sides of the echinss, the only part of the whole known to us; this w will explain why there is no interruption in the row of eggs extending entirely around this abacus.

Note 2.p.630. Sketches of this capital and of another from the same source (Pl. LIII,3) have already been published by Homolle (Les Travaux de l'Ecole francais dans l'isle de Delos. 1890. p. 27-28). Our thanks are due to M. Nenot, who courteously placed at our disposal his original drawings.

To return to the capital of Delos, there is awkwardness o both in the general form of this plateau and in the absence of all relation established between the two volutes; yet this capital already has an entirely different appearance from t that of Neandria, with which it still has certain common traits; it is nearer the forms that classical art has rendered familiar to us. A simple annulet, here traced with a brush, ornaments the top of the shaft.

A capital from the Acropolis of Athens marks a step farther in the same path. (Pl. LIII,4). This is a surface terminated by an abacus cut in the mass and rounded at the sides. The volutes are separated by a light palmatium and present an a arrangement analogous to the Delian capital, but with the d difference that they are varied at their springing by a horizontal bar in which one can see the beginning of the channel, which will later connect the spirals together at top.

Progress is marked in a still more sensible fashion in a second capital from Delos (Pl. LIII,3). The volutes are there independent of each other; the palmatium is again interposed between them; but the starting point of the spirals is at the top of the capital in the horizontal plane, instead of being on the shaft. The direction of the volute is reversed; the

change is notable. They were occupied in forming a happy junction between the shaft and the surface. The shaft is here surmounted by an echinus, which is far from having the amplitude of the Doric echinus, but is decorated by a row of eggs.

A monument whose place is marked in that series of transitional types is the marble column, which at Delphi supported the sphynx erected by the Naxians on the sacred way in honor of Apollo; recent excavations have allowed the fragments to be put together and the entirety to be restored (Pl. LIV).[1] The shaft has 44 flutes there, but these flutes are stoll those of the Doric. On the other hand, on the capital the volutes no longer form two distinct motives. A little smaller at the sides than the shaft, they are connected at their springing by a horizontal band. They no less develop fully entirely outside and at a distance from the shaft; they are sufficiently distant not to interfere with the row of eggs that ornaments the echinus. That assumes an importance on t this capital, that it will not retain later; it is higher t than the band connecting the volutes.

Note 1.p.632. Pl. LIV. The capital in perspective, from d drawings of Tournaire. 2; plan as seen from below. 3; Elevation of capital. 4, side elevation. 5; transverse section. 6; plan of capital seen from above.

The capital of Delphi has the volutes still present, those detached and falling forms, that characterize several of the capitals previously described (Pl. LIII,1,3); but the transformation is completed; a last capital found on the Acropolis of Athens (Pl. LIII,5). There by the effect of the connection established between the volutes, the capital is no longer c composed of two elements juxtaposed instead of being combined, as on the first sketches of the type, it has its unity; but on that work of real elegance, the band connecting the two spirals forms at bottom a curve, whose gentle inflection is much more in harmony with the curved lines of the volutes, t than was the stiffness of the two parallel s.raight lines, which fulfil the same function on the capital of the Naxians. (Pl. LIV,3). Further, here the volutes at the sides approach the echinus, where the eggs are painted and not carved,sufficiently to encroach on and intersect it, so as to conceal a part from the eyes. To be noted also is the form of the

cushion, which is thinner at the middle; it thus assumes more lightness and a certain grace. The two sections opposite (Figs. 280, 281) show what precautions were taken to prevent all displacement of the votive offering borne by the column, a stele or statue. A long bar of metal formed the connection; it passed entirely through the capital and was cast in lead entirely around it. This was placed in the funnel shaped hole cut in the top, filled the cavity formed at the middle of the block, thus surrounding and fixing the foot of that dowel.

We thank MM. Homolle and Tournaire for the courtesy with which, for both the column of the Naxians as for the treasury of Cnidos, they placed at our disposal drawings executed for the publication in which are to be presented the results of the excavations at Delphi.

The block in which is cut the Ionic capital being always of rectangular area, the capital could be without the abacus. (Pl. LII,1,2; Pl. LIII, 2,3); Where it exists, as on the two last capitals described (Pl. LIII,4,5), it is always cut in the same block as the two volutes. Actually, this is only a simple fillet, merely a moulding serving as an ornament. A fret of very careful execution is traced with the brush and decorates it on the capital of Athens, that we have regarded as the last term of the series of archaic capitals.

With this capital that at latest dates from the first years of the 5 th century, we feel ourselves very near the classical capital. Men have not failed to observe that from Neandria to the column of the Naxians and the votive columns of the Acropolis, the top surface has always been flattened and enlarged. When in the Doric style the stone entablature was substituted for that of wood, the architect must have given his abacus an extension, that it did not have in the Mycenaean capital. It was the same for the constructor that employed the Ionic style. The moment came when he must replace by stone beams the light wooden beams, that the primitive capitals sufficed to support; in changing the arrangement of the volutes, it was then necessary for him to arrange a longer bearing area at the top of his capital. By this change the capital becomes suited to receive a heavier burden and to appear so; the eye demands that the architectural forms inspire it with confidence, to arouse in the mind the feeling of entire

security. It is so far from that work of an already wise art to the strange types, that have seemed to us to be its precursors, there is the labor of many generations of anonymous artists. Grecian genius has done its work, that genius which was never satisfied by the result obtained, and which during the ages did not cease to seek better, always applying itself to resume certain forms with a passion never wearied, to bring them to perfection in letters as in arts, in quite limited number, that it had invented early and whose future it had divined. In the domain of architecture one of the noblest of those forms was the column, and particularly the Ionic c capital. If one possessed the entire legacy of antiquity, h hundreds of capitals differing from each other in some trait, would represent the effort that the architect imposed on himself in the course of the intial period to create and develop this type. Time has spared but very few of these sketches; Yet perhaps we can have an extended list of monuments to which our observations have been devoted. We have refrained f from multiplying their number; those which we have presented have seemed to us sufficient to render very probable the hypothesis of a movement operating in the direction indicated by the order in which we have arranged the few examples, that we have chosen. Those understood, the movement indeed has the characteristics of an organic evolution.

Besides the type that by the junction and inversion of the volutes ended by giving the capitals of the Attic temples of the 5 th century, there seem to have existed another, that passed almost unperceived until recent times. What there composed the capital was an echinus concleaed beneath a facing of elongated and ascending leaves, whose ends meeting the a abacus, recurved and fell downward outside. For example, such is a capital of Delphi, that came from the monastery of the Panagia, i.e., from the ancient gymnasium (Fig. 282).[1] This is the same capital that was found in one of the porticos surrounding the temple of Athena Polias built under the Attalides at Pergamon, as well as in other edifices of the same epoch (Figs. 283, 284, 285).[2] Like the capitals with falling leaves of Neandria and of Aegae (Figs. 277, 278), this capital constructed on a circular plan was especially suited for columns erected at the middle of a void space in which circu-

circulated the promenaders. One is inclined to think that t this type was particularly employed for the internal supports of porticos;[1] my its entire form it assumes a light load. The columns ending in that way perhaps directly supported the b beams of the ridge of the carpentry; in that case they would have been taller than those of the outer rows, and the architect would have desired to distinguish them by giving them a special capital.

Note 1.p.636. Antiquities of Athens and other places in G Greece, Sicily, etc. 1830.

Note 2.p.636. Fragments of a capital thus cut as a calthos, but provided with an abacus, were found at Athens in the portico of Attalus; they seem to have come from an internal order. Other capitals of the same kind have been found on the southern slope of the Acropolis of Athens. They must come f from the Asclepion.

Note 1.p.637. R. Bohn in Altertümer von Pergamon. Vol. II. Note on p. 48.

Properly speaking, this capital indeed depends on neither the Doric nor on the Ionic style. If we mention it here, it is because it presents a sensible relation to those, which according to Dörpfeld surmounted the 7 columns of the nave of the temple at Neandria, an edifice of the Ionic style. (Fig. 277). The curve outlining the contour of the capital is convex at Neandria; it is concave at Delphi and Pergamon; but on both a bouquet of leaves crowns the shaft, and alone ornaments the top. The principle of the decoration is then the same, both at Neandria and Aegae as at Pergamon. Small or large, those three cities were situated in the district formerly peopled by the Eolian tribes. If then one desires to give a special name to the order characterized by that exclusive use of leaves for the decoration of the capital, it seems that it can be called the Eolian order, or when one only considers the form that it assumed in the monuments of the classical age, the calathos order. Perhaps it is necessary to see there the ancestor of the Corinthian order. We shall have to seek later, whether at the origin that was not constituted by the stone calathos on which were applied bronze ornaments in a very peculiar style, but which on the whole had their prototype in both the Ionic volutes and in the Eolian

leaves. These leaves further supply up to the present time the sole trait by which one can define that order. The shafts are plain at Neandria, Aegae and Pergamon. For Neandria and Delphi, the base is wanting. At Aegae and Pergamon the bases are Ionic. In general the capital has no abacus, or that abacus is very much reduced: a wooden beam must have rested on the columns.[1]

Note 1.p.638. The capital of Delphi is surmounted by a heavy abacus in the engraving by Cockerell, that we have reproduced; but the manner in which it is presented gives reason to think that this abacus is a restoration, added there by the draftsman. The explanation of the plate gives no indication on this point.

We should mention this forgotten order; but the masters t that built the most celebrated edifices of Greece did not a admit it in their arrangements, or at least in their external arrangements, those alone of which there remain fragments of some importance; they did not subject it to that slow and w wise elaboration through which passed the Ionic style. In t the effort that it made to comply with the requirements of taste and to adapt itself to the progress of luxury in construction, the latter not only labored on its own basis by applying itself to perfect the forms peculiar to it, but it was also inspired by forms given by Doric architecture. With regard to the general arrangements of the edifice, we have shown how the architect who employed the Ionic style was led to reproduce with other elements the consecrated type of the Doric temple; but even before abdicating thus its primary f freedom, it was inspired by this model for many details, that have their importance. Thus one cannot refuse to recognize a sensible analogy between the angle triglyph of the Doric frieze and the two pairs of volutes presented by the angle column of the Ionic portico (Pl. X,1). Place on that column a capital similar to the others, and the spectator passing around the edifice would have before him at one point of the exterior only the volute, the part of the capital not made to be seen directly in full light, but which is affected by the shadow cast by the architrave and almost escapes from v view; the appearance of that angle would have something awkward and defective. Like the doubling of the triglyph, that

of the joined volutes allows this defect to be avoided; by it the capital has the same appearance on both facades, if one may so speak, which ensures to the angle all desirable firmness. The two arrangements do not apply to the same part of the building, but were suggested by the same need; they solve with equal success two problems with data almost similar. In the Ionic style, the difficulty did not exist in the frieze, which was continuous; but it presented itself for the capital, which deffering from the Doric capital had what may be termed a front and an end. According to all appearance, this arrangement adopted for the Doric frieze gave the idea of the method adopted for the Ionic column.

It was for the ante as for the angle column. Here, as in the Doric order, a capital was given to the ante, which is not that of the column, while recalling it in certain respects by the nature of its decoration. In both, the principle is then the same. What differs is the character of the mouldings. Here are no rude facias, no very marked divisions. The Ionic ante does not terminate with a projecting crowbeak moulding, as the Doric frequently does. What one finds there is a series of very ornate mouldings in low relief, in which are found those presented by the capital of the column,.palmatiums, eggs and ogees (Pl. X,1). This ante is that which one can call the Attic ante. In the Ionic temples of Asia Minor built under the successors of Alexander, we shall find another type. The ante is there crowned by a capital without mouldings, but decorated by two vertical volutes joined at their base by a wide band.

In spite of the tendency which thus marks the assimilation of the two orders, what distinguishes them and will always distinguish them is the appearance and proportion of the columns, without speaking of the originality of the capital. The Ionic shaft is lean; one feels there the imitation of the t trunk of a tree, much more than in the Doric shaft, but of a trunk resting on the ground at its lower end, and which thus resembles the mast of a ship. This wooden support from which it appears to be derived, it is not necessary to insert to change it into a stone support, as required to be done for the Mycenaean column. For the column as for the entablature, timbers of quite small size served the constroctor to whom

succeeded the Ionian architect. The use of these methods gave a long and slender column, whose stability would have been compromised if the drums had been multiplied too much; it is rare for more than three or four to enter into the composition of the Ionic shaft.

The architect appears to have hesitated long as to the style to be given to the shaft. At Neandria, Samos and Aegae, he left it plain. More frequently he ornamented it by flutes. On most monuments of the archaic age, these are entirely similar in section to the Doric flutes; but are narrower and are repeated in greater number around the shaft. It is rare that on the Ionic column the number of flutes is less than 24, and it sometimes rises to 40 as at Ephesus, and even to 44 on the column of the Naxians at Delphi. Finally, the flutes bordered by fillets only appeared quite late, and only from the 5 th century a custom without exception applied it to the Ionic temple. When the Ionic approached the Doric in other respects, it commenced about that time to separate from it by this secondary trait.

On the other hand, the difference of proportions is accented from the origin and has always maintained. The Ionic was born more slender than the Doric, as one ~~giant~~ may say, and so remained while it existed. That is to the point that the thickest of the columns is still thinner than the most slender of Doric columns; thus the Ionic shaft has a less marked diminution; it presents nothing comparable to that curve that we term the entasis.

3. Entablature, Carpentry and Roofing.

One would be much embarrassed to form an idea of what the entablature might be in the most ancient Ionic edifices, if it were necessary to require information only from the remains of the buildings; nothing remains from their friezes and cornices, which gives reason to think that the entire upper portion of the structure was of wood; but what was the character of that carpentry work? We should know nothing here, unless in that country itself that was the cradle of this architecture, one did not find rock-cut tombs, whose fronts are decorated by an Ionic order. Doubtless tombs are generally very much later than the monuments in which we have sought the secret of the methods and taste of this growing art;

but we have stated with what scrupulous accuracy the workmen that cut those tombs in the rock, endeavored to reproduce the forms presented around them by the house and the temple.[1] We take our examples from conservative Lycia. The number of tombs there with their roofs in form of a pointed arch, and t their visible trunks that support the weight of the terrace are a literal copy of the house of the Lycian mountaineer. We do not turn to those; their forms are too peculiar and t too rustic. The tombs that appear to us able to furnish the desired information are those in which is still maintained the tradition of the primitive methods of construction and of the assemblage of the carpentry appropriate to them, but where Greek taste has already sensibly modified the indigenous and local type, certain elements of which have entered into the system of forms, in the style of architecture that he labored to create. As a specimen of those facades, we have chosen a tomb of Telmissos, of which we show the angle in p perspective (Pl. X,3). Other tombs of the same kind can furnish us with indications, that accord with those that we owe to this monument.[2]

Note 1.p.641. Histoire de l'Art. Vol. V. Figs. 250, 251, 260, 261, 262, 264, 265, 266, 267.

Note 2.p.641. Texier. Description de l'Asie Mineure. Pl. G-I, 171. We should have had only the embarrassment of choice, had we desired to seek our examples in the series of Phrygian tombs of the elevated valley of Sangarios (Histoire de l'Art. Vol. V. p. 140, Figs. 92, 97). There also is found the architrave cornice with the row of dentils, that extends everywhere beneath the cornice.

The mode of the entablature that may be divined from that assumed architecture sensibly differs from that offered to us by the Doric entablature. Like it, it is doubtless derived from wooden construction; by that are explained the forms that characterize it in stone construction; but it assumes in the edifices of the primary age that served as models, t types of carpentry very clearly distinguished from those that we have restored at Mycenae. It suffices to glance at one of those facades to recognize that it was with the parts of the entablature as with the supports of the portico; in the entablatures of wood of which we have a stone translation, the

beams composing the architraves were of much less size, than those playing the same part in the carpentry, whose arrangement was reproduced by the Doric entablature. The Mycenaean carpentry was composed of solid and large beams, each of which had its special function, and constituted in itself alone one of the architectural membees. This Asian carpentry on the contrary, was only composed of timbers of moderate size, that could play all parts indifferently. The adjacent theoretical sketches will illustrate the arrangements to which the use of these timbers led, arrangements produced by the mode of construction termed piling (Fig. 236).

Several courses of beams there form the architrave. There are certainly two indepth and two or three in height. In elevation each of these beams, whatever their number, projects sligatly from that supporting it (Fig. 236).

On these architraves, thus composed of 4 to 6 timbers, with no other intermediary than the wide plank that serves to cover the joint, rests a floor made of nearly similar beams (Fig. 237). As in the Mycenaean megaron, there is necessarily a r row of beams perpendicular to the main axis of the building; but what is peculiar to the Ionian ceiling is, that there are also beams placed in the longitudinal direction (Fig. 233). Thus is constituted an open lattice that presents in all directions a sort of square openings. The ends of the beams everywhere project beyond the architrave on which they rest, so as to be visible on the four sides of the edifice. This arrangement can be secured only by a special arrangement, that seems to have been employed particularly in Asia Minor, and that is termed halving (Fig. 239).

Covered by thick planks, beams placed lingthwise would largely suffice to bear the load of the terrace. Everything considered, one can affirm that also the solidity of the ceiling would be well ensured, except by this crossing of the two series of beams. The gains required by this procedure in connecting weakened these beams. There is then a method pursued, which is explained only by the search for an ornamental effect; men found pleasure in seeing project thus on the four facades above the plain walls or the openings of the portico, these uniform and symmetrically arranged ends of beams; it is probable that most frequently the end was painted a vivid

and perceptible tone, that gave that series of reliefs the character of an ornamental motive.

In that restoration of the primitive carpentry of the Ionic building is nothing,conjectural. By considering the most ancient Ionic capitals, such as those of Neandria and of Lesbos, one already divines how small were the beams that they supported. There was not space for a beam of great size on the very small area left between the volutes. But this indication would not have sufficed. What has permitted us to restore the entire system of Ionic carpentry is an attentive study of the monument of Telmissos (Pl. X,3); one there finds sensibly enlarged all the elements represented in our sketch. The architrave is there divided into two lintels, which morrespond to the two superposed beams of our drawing; the lower band recedes slightly behind the upper band; over that a narrow fillet represents the covering plank. The contrast is m marked between the division of the Ionic architrave and the unity, that the Doric architrave always remains.

Over the architrave here projects a rectangular ornament known by the name of modillion. It naturally represents the ends of joists, and its presence on two adjacent facades is explained only by this system of crossing of the beams evidenced by all Lycian tombs by the projection of the ends of the joists on the four faces. This same ornament is called dentil, when of smaller size; the dentil differs from the modillion only in dimensions; it assumes a ceiling of the same arrangement, but made of smaller timbers.

On the tomb of Telmissos, these modillions are surmounted by a slightly projecting cornice. That corresponds to the facing, to the border that served to retain in place the tamped earth of the terrace.

In the primitive Ionic entablature, such as it may be seen behind these copies of dates more or less recent, there is then no place for the frieze. At Telmissos the entablature is what architects term an architrave entablature, i.e., where the cornice rests directly on the architrave. It is no longer thus on the Ionic monuments of the classical age. The entablature has suffered the influence of the Doric style. men did not take from the Doric the solemn rhythm of its triglyphs, which would not have been in accord with the more i

irregular arrangement of the richer and freer elegance of the Ionic edifice; they contented themselves with a continuous lintel, which the sculptor could be called to decorate by f figures or by varied ornaments, and which even when it remained plain, had the advantage of giving to the entablature more height and a happier proportion, analogous to that of the Doric order. This method was most generally adopted; yet they sometimes departed from this rule. Whice there is not and cannot be an example of a Doric monument with an architrave entablature, that is found at Athens itself on that porch of the Cariatids, which formssa part of the Erechtheum.[1] It is again found on the Leonidaion of Olympia and on the p portico of the great altar of Pergamon. Although few, these exceptions evoke the memory of the original type; they suffice to attest, that the frieze in the Ionic style is not indispensable to the entablature; they show in what conditions and under what influences the architect judged it well to insert it.

Note 1.p.645. As perhaps a unique example of an architrave entablature in a Doric edifice, one can cite that crowning the substructure of the second portico in the Abaton of Epidauros. (Cavvadias, Fouilles d'Epidaure. Vol. I, Pl. XII, Fig. 31). This second portico further is later than the Roman conquest, at least in part.

Of the traits that characterize the prototype to which we have believed it possible to ascend, that which is most faithfully preserved on the later monuments, is the division of the architrave. This is divided toto three facias on the entablature of the temple of Wingless Victory (Pl. X,1), that of the Erechtheum (Pl. X,5), and on that of the temple of Athena Polias at Priene (Pl. X, 4). On the contrary, the modillions and dentils were not to the taste od the architects, that introduced the Ionic style at Athens, and their example was followed by the masters that practised the same art in the other par.s of continental Greece; there are modillions neither on the temple of Illisos, at the Erechtheum (Pl. X,5), nor on the temple of Victory.(Pl. X,4). Only in Asia Minor has been retained the habit of employing that motive; all around the temple of Priene, a row of modillions seems to support the cornice (Pl. X,4). One can then distinguish in the

Ionic of the classical age two different modes; the Attic a and the Asian modes.

In the most ancient edifices, the ceilings of the portico and of the cella can only be of wood. The form of the coffer was imposed to fill the spaces left between the timbers, and the procedure by which the carpenter obtained it could not bedifferent from that described in regard to the ceilings of the Doric temple. As for those, the coffers of ancient wooden constructions in the Ionic style are represented only by translations of them given by stone in the edifices of quite recent date; under that title we have represented the coffers of the temple of Wingless Victory (Pl. X,2), and that we show those of the Erechtheum of a different appearance (Fig. 290). All the difference is, that in the Ionic building, the coffers seem to have corresponded with more rigorous symmetry to the axes of the columns and to the intercolumniations. As a type of this entirely geometrical regularity, it will suffice to cite the elegant edifice known under the name of tomb of the Nereids, which uas brought from Lycia and entirely reconstructed in one of the halls of the British Museum. Further, the coffers in the two styles are not in accord with the same parts of the building. In the Doric, they rest on the courses of the frieze; consequently they are at the level of the cornice (Pl. VIII, 3-6); on the con.rary in the temple of Victory, they rest on the architrave (Pl. X,2).

On the great temples, such as those of Ephesus and of Samos, the principle of the carpentry of the roof must be the same, as on the Doric temples where the cella had an internal order; but neither the entablature nor the wall of the pediment being preserved on either of these edifices, there remains no trace of the arrangements adopted in this matter by the Ionian architects. Of the monuments of this period, there is o only one that from this point of view supplies some useful indications to the historian; this is just the most ancient of all, the temple of Neandria. Being given the position of the columns that divide it into two aisles, the carpentry must present there a very simple arrangement;[1] the tiles have been found, and these present varied forms, according to whichis restored a covering, which does not essentially differ from that, whose arrangement we have studied on the edifices

of another style and of a later age; it is that illustrated by the perspective view of a part of that roof (Pl. X,6). One distinguishes there flat tiles of very large dimensions, (they are 1.74 + 2./6 ft) and covering tiles; the latter are of semicircular form with a diameter of about 6.3 ins. At the base of the roof, the flat tiles had a raised edge in which opened a projection that cast the water outside; the covering tiles ended with a semicircle forming an antefixa, on which was modeled in low relief the front part of a crouching panther painted black. Some fragments of an acroteria were gathered, that ended the row of ridge tiles. According to the slight remains found, it is supposed that it was much smaller and must offer some resemblance in form and ornamentation to the enormous acroteria of the Heraion of Olympia.[1] (Pl. XLVI).

Note 1.p.646. Koldewey. Neandria, p. 43, Fig. 65.

Note 1.p.647. The same. p. 46-48.

So that it seems demonstrated, that from the 7 th century the Ionian architect placed a gable roof on the temples that he endeavored to build. According to all appearance, the slopes of this roof here showed a very slight inclination.[2] If the pediment were already outlined at the two ends, it could only be very low; in time it gained in height and importance; but no more for the Ionic than for the Doric style does there exist a monument, which dates back to an age when the temple was covered by a simple terrace of tamped earth.

Note 2.p.647. For the arrangement of the carpentry and the slight slope of the roof, Koldewey believes that some useful indications are found in the imitative architecture of the rock-cut tombs of the elevated valley of the Sangarios, monuments that must be nearly contemporaneous with the temple of Neandria (p. 44); the Phryginans, subjects of Gorgios and of Midas, further maintained intimate relations with the Greeks of Ionia and of Eolia. He especially recalls in this respect one of the most important, but most ruined of these sepulchres, that where the ridge beam is clearly represented at the junction of the two slopes of the roof. (Histoire de l'Art. Vol. V. Fig. 71). There are indeed some analogies that merit some attention.

5. The Mouldings.

4. The Mouldings.

There remains almost nothing of the Ionic edifices of the first age; then one cannot undertake to define the elements of the mouldings that characterized this style at its beginning; scarcely can some brief indications be presented for this subject. In the bases we have found the scotia and torus (Pl. X, 7), the ogee on the the column of Ephesus above the relief that decorates the top of the shaft (Pl. X, B). The Ionian architect does not seem to have ever used the crowbeak moulding, that on Doric edifices terminates by such a firm profile the capital of the ante and the projection of the c cornice; he replaced it at the top of the ante by an uninterrupted series of mouldings in which the ogee and quarter round dominate. Mouldings are few on the Attic entablatures. The quarter round or ogee surmount the architrave, and generally one of these two forms terminates the cornice. Above are cymas of different forms; very few ancient examples are known. The egg serves as ornament for very ancient capitals (Pl. X,C; Pl. LIII,3). The dentils and modillions give a very peculiar appearance to the cornice in Asia Minor. (Pl. X,3,4).

What one sees, is that from a very early time Ionic art h had a taste for less sober ornamentation, more florid in detail, less free and powerful than that of the Doric order. This taste will produce its masterpiece at Athens in the decoration of the Erechtheum, as already announced, and appears in the monuments dating from the preceding century. Indications abound. On the oldest capitals the palmatium separates the two volutes rising vertically (Pl. LIII 1,2; LIV, 1,3,4); the flstes ornament the ends of the volutes (Pl. X, D, E; LIII ,3; LIV, 1,2,4); at Neandria the double crown of leaves forms the connection of the shaft and capital (Pl. LIII2), or composes by itself the capital (Fig. 277); on the capitals of the steles, it is the echinus ornamented by eggs (Pl. LIII,3) or by leaves (Pl. LIII,5); the fret painted on the abacus (Pl. LIII,5); the entire Eolian capital with its fully expanded bell of foliage (Figs. 282, 283).

From the last years of the 6 th century, this taste manifested itself with magnificence at Delphi in the erection of the chapel of the treasury, that the Cnidians consecrated t there to Apollo Pythios. The Cnidians spoke a Dorian dialect;

4. The Mouldings.

There remains almost nothing of the Ionic edifices of the first age; then one cannot undertake to define the elements of the mouldings that characterized this style at its beginning; scarcely can some brief indications be presented for this subject. In the bases we have found the scotia and torus (Pl. X, 7), the ogee on the the column of Ephesus above the relief that decorates the top of the shaft (Pl. X, B). The Ionian architect does not seem to have ever used the crowbeak moulding, that on Doric edifices terminates by such a firm profile the capital of the ante and the projection of the c cornice; he replaced it at the top of the ante by an uninterrupted series of mouldings in which the ogee and quarter round dominate. Mouldings are few on the Attic entablatures. The quarter round or ogee surmount the architrave, and generally one of these two forms terminates the cornice. Above are cymas of different forms; very few ancient examples are known. The egg serves as ornament for very ancient capitals (Pl. X,C; Pl. LIII,3). The dentils and modillions give a very peculiar appearance to the cornice in Asia Minor. (Pl. X,3,4).

What one sees, is that from a very early time Ionic art n had a taste for less sober ornamentation, more florid in detail, less free and powerful than that of the Doric order. This taste will produce its masterpiece at Athens in the decoration of the Erechtheum, as already announced, and appears in the monuments dating from the preceding century. Indications abound. On the oldest capitals the palmatium separates the two volutes rising vertically (Pl. LIII 1,2; LIV, 1,3,4); the flstes ornament the ends of the volutes (Pl. X, C, E; LIII ,3; LIV, 1,2,4); at Neandria the double crown of leaves forms the connection of the shaft and capital (Pl. LIII,1), or composes by itself the capital (Fig. 277); on the capitals of the steles, it is the echinus ornamented by eggs (Pl. LIII,3) or by leaves (Pl. LIII,5); the fret painted on the abacus (Pl. LIII,5); the entire Eolian capital with its fully expanded bell of foliage (Figs. 282, 283).

From the last years of the 6 th century, this taste manifested itself with magnificence at Delphi in the erection of the chapel of the treasury, that the Cnidians consecrated t there to Apollo Pythios. The Cnidians spoke a Dorian dialect;

but they were too near Miletus not to suffer the influence of the arts of Ionia. It was an edifice of the Ionic style, on the sacred way at the foot of Parnassus, that represented the Dorian island of Cnidos. The skilful architect attached to the mission of Delphi, M. Tournaire, measured and drew in place all the arrangements of the edifice; he is preparing a restoration of it.

Note 1.p.648. Homolle has given in Bull. Corr. Hell. (1896, p. 581-602) a very precise description of the treasury of C Cnidos; it only lacks illustrations.

Until the day when these precious documents are delivered to the curiosity of archaeologists, all that one can see in the fragments exhibited in the museum of Delphi is the general character of the edifice. Built of marble from the islands, it presents the plan of a temple with antes and two columns between them, like the treasuries of Olympia. Their height with base and capital is about 15.7 ft. The flutes h have sharp edges there, but are only 18 in number. Only the lower part of the base has been found, and it seems to have resembled that of Ephesus; the capital is wanting. What forms the interest and originality of the little building is that the forms of the different members there are already very e elegant, and that the decoration there is singularly rich. The architect has placed sculpture on all surfaces suited to receive it, on the pediment and the frieze; the latter presents a continuous series of reliefs in which are represented many scenes borrowed from the myths, that poetry has made p popular in the entire Grecian world. where there was not room for figures, there were everywhere ornamental motives of happy design, of precise and even fine execution, where the brush of the painter completed the work of the chisel by the application of vivid colors. Above the frieze extends a bead with very large pearls, surmounted by a Lesbian cyma; above extends the cornice, where on the soffit of the cornice the sma pearl bead serves for a band in which palmatiums of pretty design alternate with open lotus flowers (Figs. 291, 292). The same recurring motive runs along the three edges of the enclosure of the door giving admission to the cella (Fig. 293); but there is more caprice in the arrangement of the foliage; from the stems bearing the opened flowers are detached

buds bending in the inverse direction. The variant is happy; it gives to the garland a less conventional appearance.

When the treasury of the Gnidians was built about the year 520, the motive derived from the inflorescence of the Egyptian lotus had long been in the repertory of the Grecian decorator; he very frequently employed this foliage in which he caused to alternate, sometimes the buds and floners of the lotus, sometimes the latter and palmatiums. The most ancient monuments on which appeared the motive in question is a series of painted vases attributed to the potters of Ionia; it was further soon borrowed from them by the potters of Athens, and thus had come into the public domain.[1] The Attic decorator used it in the painted ornamentation of his Doric cymas after the time of the Pisistratides (Pl. XLVI); if one does not find it on the temples of the Acropolis in the 5 th century, it is seen to reappear on other Ionic edifices. In any case, it seems to have been in the 6 th century the object of a strong preference by the Ionian architect; he repeats it at Delphi on both parts of his edifice. One cannot be astonished: it must be by the entermediary of Ionian artisans, who were first in relations with Egypt, that this motive was disseminated in the workshops of the Grecian world. Men were more attached to it in Ionia than elsewhere: Ionia had become its second country.

Note 1.p.650. This motive is in frequent use on the so called hydrias of Cere, that are believed to be of Ionian fabrication. Massner. (Die Sammlung antiken Vasen in Oesterreichischen Museum. Pl. II, No. 218. Pottier. Bull. Corr. Hell. 1892. p. 257. Fig. 7).For the little isolated bud springing from the same stem, there are examples on Ionian vases still unpublished, as well as on a cup with foot in hall E at the Louvre; but it is more common to see the isolated bud leaving the ground. See Dümmler. Röm. Mitt. 1888. p. 165. Pl. VI, (a vase from Kyma), as well as the sarcophaguses of Clazomene.

The treasury of the Gnidians would have merited a more thorough study, one that would have been the natural and logical end of the researches, that we have undertaken on the first period of the development of Ionic art; one would have seen in what spirit and with what success the Ionian architects had cultivated their national art, and how far they had

had carried its evolution, before the time when the Attic masterswill adopt that art and produce the works, which one is accustomed to regard as its masterpieces. However, what results from these indications, insufficient as then are, is than on anedifice like the treasury of the Cnidians, t the Ionic style already presents the most characteristic traits that distinguish it in the temples of the Acropolis of Athens. The same tendencies appear; one there feels the same effort made by the artist to demand from the grace and the profusion of ornamental effects od a kind different from those aimedat by Doric architecture; this artist aspires henceforth to realize a different type of beauty, where the whole has less grandeur, but which must please especially by the singularity of finish of the details. The architect to whom the Cnidians confided the direction of this work did not have at command collaborators with such delicate hands as the incomparable workmen, who carved the capitals and friezes of the temple of Wingless Victory and of the Erechtheum; but he had the same tastes and the same feelings; he conceived the same ideal. We thus come here to the same conclusion as by the study of the monuments of the Doric order; t the 6 th century was the true age of bold and fertile invention. This is what makes the edifices of the 6 th century so interesting; it is what justifies the attention that we have accorded to them and the place that we have assigned them in this history. Later and especially after the 4 th century, art will repeat itself; more than one temple will be, with variations in details, only a replica of a model already consecrated by universal admiration, only an enlargement or a reduction of its model, a copy more or less free. In the 6 th century Grecian architecture is made; each new work, when it does not represent an advance accomplished, at least earns the name of a personal effort, of an intelligent and sincere endeavor. That century has created all the original types. The 5 th century has added almost nothing to this treasure of forms, no more in architecture than in sculpture; its merit and its honor are only to have attained that mastery and that certaintyin execution, that impresses on the work of a art a character of perfection, by which it can never grow old, and must hereafter be forever proposed for study and

imitation.

It is scarcely necessary to indicate, that also the Ionian architect used color to distinguish from each other the different members of the building, and to enhance the effect of his ornamental motives; very apparent traces of polychrome decoration are preserved on the temple of Locres, the treasury of the Cnidians and on the capitals of the steles of Delos and of Athens (Pl. LIII,1,5). Its principle was the same as that of the Doric style; but did this decoration present a peculiar character on the edifices erected on the soil of Ionia? Did the architect there make use more largely of tones applied on stone, and what were those tones applied by preference? The remains of Ionic temples preceding the 5 th century are in too small number, and have reached us in too fragmentary condition for it to be possible to reply to these questions. All that one discovers is, that the painter must have been called there to lend to the sculptor a more active and more continuous assistance, than on the edifices of the Doric style. The ornamentation of the Ionic was more complex and more delicate; to accent the refinements that he sought, to give to his entireties a very rich and brilliant appearance, the architect had still more need of the collaboration of the brush. Facts confirm these conjectures. The painted ornamentation is already of very refined elegance on the steles of the Acropolis, and for the Erechtheum it is known to what selected artisans the execution was entrusted; this is evidenced by the designs, whose vestiges are still perceived on the marble, and the texts that have transmitted to us the accounts of the work.

Chapter V. Comparative Study of the two Orders. Their Origins.

In this history of grecian architecture we have assigned the first place to the Doric temple. We have considered it in all its aspects; we have followed it in all its ascending movement from the foundations on which it rests to the apex of the pediment, to the long line of ridge tiles. We have endeavored to recover much rather from the monuments themselves, which are numerous, than in the texts, which are rare and often obscure or contradictory, the entire system of rules that in time were evolved in the practice of the ancient constructors. The Ionic style came only in the second place, and the study of the methods peculiar to it has been far from having the same development. Yet in antiquity this style did not enjoy less favor than its rival; it even ended by dethroning it. Two edifices of the Ionic style, the mausoleum of Halicarnassus and the temple of Artemis at Ephesus were ranked among what were termed the seven wonders of the world.

The order that we have followed and the difference that we have made are not explained merely by the chance of destruction, which for the archaic period spared more Doric than I Ionic temples; there are more serious and more profound reasons for this precedence and greater importance assigned to the Doric style.

Like all creations of literary or formative genius, Doric art had its antecedents from necessity. It was not born in a day by a sort of miracle. By its roots it descends into the past; but this is not the past even of the people to which is due its blossoming and expansion. One knows what an idea we have formed of the tribes, whose work is represented by the monuments of the civilization called Mycenaean; we believe that they have furnished certain elements, which entered into the composition of the Hellenic race, perhaps those that have played in the formation of this ethnic type the most useful and the most decisive part. The constructors of the walls, palaces and temples of Mycenae and of Tiryns must be counted among the direct ancestors of the historical Greeks. The imagination of those protohellenes traced the first sketch of the epic poem, and the palace of their princes, t the megaron, was the pattern by which was cut out the form of

of the Doric temple.[1] If that is larger and more beautiful than the megaron, this superiority of the temple is explained by the progress of religious beliefs, and by the substitution of stone for wood; but under all the additions that it has received, behind those rows of columns that have come to enclose it, the primitive type always allows itself to be recognized; it persists until the latest hour. As heir and continuator of Mycenaean art, Doric art is then especially the national art in the domain of architecture.

Note 1.p.654. This was also well seen by Noack (Studien z zur griechischen Architektur, in Jahrb. Arch. Inst. 1896. p. 211-247). We received this Memoir when our theory of the Doric temple was already edited and printed; but we have read it with lively interest. On many points there is a singular agreement between the ideas stated by M. Noack and those at the same time suggested to us by the study of the monuments.

It has merited this title in another way. The cradle of t Doric art is a country situated equidistant from the remote Grecian cities, those of Asia and those of Italy or Sicily. Doubtless the tribes established in that peninsula did not fail to enter into relations with foreigners; but there was no immediate contact. The suggestions received in that way aid them to equip themselves with tools and favor the progress of their industry; they did not weigh so heavily on their minds as to injure their spontaneity. There was every chance that the art developed in these surroundings should be the freest and most sincere expression of Grecian genius; thus one is also to ask himself if the arts of the Orient by the models that they offered, have influenced in even small measure the choice and character of the forms, whose combination constituted the Doric style. If one has sometimes been able to find some traces of that influence, those traces are very slight. In Egypt, in the sole earlier civilization whose temple is known to us by examples in fine preservation, men at first sought the types by which the Greeks were inspired; n now by the entire spirit of its general arrangement, the Egyptian temple profoundly differs from the Grecian temple; this is at least the case for the most imposing edifices that represent it, for those at Sais, memphis and Thebes, that m must have soon attracted the attention of foreign visitors.[1]

It is true that in that country have been found some examples of the arrangement, that among others characterizes the Greek temple of peripteral plan; but as we have stated, those examples are very limited in number. Further, they have been furnished only by edifices of small dimensions. Finally, so far they have not been found on the banks of the Nile except in upper Egypt and in Nubia. For all these reasons, they must have passed almost unperceived in antiquity.[2] They are also distinguished from the Greek temple by one trait with some importance. There are square piers and not columns, that surround the cella, and those piers rest on a stereobate, that forms a wall to the height of the sill entirely around the portico. Quite different is the portico of the Grecian temple. There are never piers but always columns, and these have their feet resting on the floor of the portico itself. The appearance is very different.

Note 1.p.655. Histoire de l'Art. Vol. I, p. 440-450.

Note 2.p.655. The same. Vol. I, p. 401-406, Figs. 222, 229-231.

One can say as much of the character of the principal forms, those that really form the originality of the appearance of the building. Better informed than Champollion, we no longer pretend to recognize in the pretended protodoric of the tombs of Beni-Hassan the prototype of the Doric column and capital.[3] The influence of Egyptian art, so far as there is reason to take it into account in reference to the Doric style, betrays itself only in accessory forms. Thus there are eggs and pearl beads. The eggs of the temples of Athens with their elegant curves, strong relief and the enclosure in which they are p placed, doubtless seem to belong properly to Hellenic art; yet one can perhaps find a sort of sketch in the decoration of the Egyptian monuments, great edifices or small articles of luxury.[1] There the egg is drawn flat and its form is more elongated than in Greece; but it is no less possible that t the first idea of that ornament had been suggested to the G Greek workman by the regular succession of these ovals, such as he saw displayed on the furniture, ivories and jewels, t that Phoenician commerce brought to him. One can also see a sort of sketch of pearl beads in those rows of disks found either on the cornices of buildings or in the decoration of

Egyptian jewels;[2] finally, on the ceilings of Theban tombs, there is more than one example of the use of the fret.[3]

Note 3.p.655. Histoire de l'Art. Vol. I, p. 550-552. The theses of the borrowings made by Doric architecture from Egyptian architecture has been recently resumed and improved by A. Marquand (Am. Jour. of Archaeol. Vol. VI, Nos. 1, 2); his arguments have not convinced us. One further sees by the title itself of the Article (Reminiscences of Egypt in Doric architecture), that the author presents his ideas only with a prudent reserve.

Note 1.p.656 Histoire de l'Art. Vol. I, Figs. 390, 566, 5 567, 568.

Note 2.p.656. The same. Vol. I. Figs. 391, 569.

Note 3.p.656. The same. Vol. I. Fig. 541.

If the fact of transmission were demonstrated, which is far from being the case, it would still remain that the eggs, pearls and frets are simple ornamental motives, that play in the edifice only a very secondary part, and that further become only very late a current usage in the Doric style. What takes from the comparisons much of their interest is, that we now know the relation that connects Doric architecture w with Mycenaean architecture, and the high antiquity of its first creations. Before the greeks spread in Egypt, the type of the Doric temple was already fixed, at least in its principal lines. We are of those who are willing to date back to at least the 8 th century the Heraion of Olympia, such as p permitted by the recent excavations to be represented with its long and narrow cella, its external and internal colonnades, with an entablature whose divisions must already be t those found on the later edifices.[4] The opening of Egypt would then have had only very indirect and very general effects on the course of progress of Grecian architecture. The sight of those enormous edifices built of limestone, sandstone and granite, must have struck the minds of the Greeks, aroused their emulation and thus hastened the transition from wood to stone among them.[5]

Note 4.p.656. As Nouck remarks (Studien, p. 225), the intercolumniations at the angles in the portico of the Heraion are narrower than those of the rest of the colonnade, a reduction that assumes a frieze with triglyphs. It is permissi-

permissible to deduce from that observation that the entablature of the Heraion, even when it was of wood, already presented arrangements that later will characterize the Doric e entablature.

Note 5.p.656. C. Chipiez. Histoire critique des ordres Grecs. p. 237.

From the moment when this substitution had been made, and the Doric style had constituted itself, it was with the forms and proportions characterizing it that were constructed in Greece proper, and everywhere except in Ionia and in the Ionian islands, the temples in which were adored the gods dearest to the piety of the entire people, and notably among the temples were those around which gathered during the great quinquennial festivals the Greeks coming from all Hellenic cities, at the sanctuaries of Olympia and of Delphi.

To this privileged situation, Ionic architecture could not pretend. Between it and Mycenaean architecture was no visible or concealed connection; nothing resembling a more or less direct transmission of methods and forms. Ionic art had as its cradle no longer the peninsula that extends between the Adriatic and Egean seas, but the western coast of Asia Minor, one of those countries that served as frontiers of the Grecian world, and where Greeks and barbarians touched and mingled to the point of mutually mixing. One knows what traces of the Carian element were left in the cults of Ephesus, and how under the reign of Croesus, Lydia made an effort to initiate itself in the ideas, arts and language of that Ionia, that Sadyattes and Alyattes had thought to conquer; yet a a few years and Sardes became a Greek city, the advanced post of Hellenism in the interior of the land. The art that had been born and had grown in those surroundings, must have suffered in a certain degree the influence of the exotic types, which struck the eyes of the Grecian immigrants, when they came to establish themselves on the soil of Asia. By a natural effect of the same causes, the temples built in those distant regions, however great and beautiful they were, had no chance of becoming at least at once, religious centres around which would assemble all the children of the race scattered over such vast areas. This art that seemed thus predestined, if not to remain always, at least during a longer

or shorter time, rather the particular art of a part of the nation, than that of the entire people.

What created the Ionic style is the intimate collaboration of the principal Greek tribes, the Eolians and the Ionians, or to speak more accurately, of the fractions of those tribes that the eddies of the invasions had cast on the shores of Asia Minor. There was no frontier between these two groups to separate them. Between both were very close relations; b both had contributed to found and people Smyrna on that beautiful gulf, whose shores they divided, and where was employed the elaboration of epic poetry. In that the ground of the myths seems to be of Eolian origin; but the Ionian forms dominate in the dialect used by the epic poets. It is nearly t the same for the architecture. The most archaic specimens of this style we have found in the Eolian cities, such as Neandria and Lesbos; but the entirely Ionian cities of Ephesus and Samos constructed the first temples, where this art showed itself the worthy emulator of Doric art by the dimensions of the edifice and the richness of its decoration. The ancients then gave it the name that best suited it; we can have no scruple in employing as they did the terms, Ionic style and Ionic order.

Note 1.p.658. Vitruvius says Doric species and Ionic species. The word order employed in the sense in which we use it, was introduced by the architects of the Renaissance.

From the day that they set foot in Asia Minor, the Ionians were in commercial relations with the peoples, who by the intermediary of the Cappadocians were in communication with t the great states of the valley of the Euphrates, civilized in very ancient times. Later in the 7 th century they become bold sailors; they meet the Phenicians in more than one market, and soon after the first of all the Greeks, they were introduced into Egypt and had chosen a domicile there.

In these conditions, foreign influences must have made themselves felt sooner and more strongly in the Greeks of Asia than in those of the European continent. When a taste for a art arose among the Eolians and Ionians, how can they resist the temptation of appropriating the forms presented to their eyes in the course of their voyages, in the edifices of the rock-cut tombs, as well as those that decorated the very

divesse products of those distant workshops, from which were transmitted the procedures of the many secular industries of Babylon and Nineveh, Sidon and Tyre, Memphis and Sais? There were those forms, if one can so speak, then current in the world, in all western Asia and in the valley of the Nile. t The volute was one of those most widely disseminated, that filled the most varied purposes. The question has been asked if the first idea of the volute was suggested to the ornamentist by the scrolls of metal wire, by the tendrils of the c climbing plant, the reversed sepals of floral calyxes, or by the horns of the goat and the ibex.[1] It matters little; what is certain is that one finds the volute, already elevated to the dignity of an ornamental motive, on many monuments of o oriental art, that are earlier than the time when the Asian Greeks commenced to build their temples. When their architects had in view their work, the volute appeared to them in the rich repertory of exotic forms under two different aspects; there were two types, that can be followed by traces during the duration of the entire period of elaboration: each of them, so to speak, has its direct posterity among the varieties of the Ionic Grecian capital.

Note 1.p.659. Histoire de l'Art. Vol. II, p. 218-222.

First type, the stilted volute. The two volutes opposite each other at the top of the shaft are joined by an arc, a stilted curve. Thus are they presented on the columns of the little structure represented on the rocks of Boghaz-keui in Cappadocia.[2] That arrangement is reproduced in more elegant drawing, but almost line for line on the capital that decorates the column of the internal order of the temple of Bassae.[3]

Note 2.p.659. Histoire de l'Art. Vol. IV. Figs. 314, 321.

Note 3.p.659. Puchstein. Das Ionische Capitell. Fig. 216. A marble capital found in the Heraion of Olympia presents t the same arrangement. (The same, Fig. 22).

Second type, independent of each other the volutes abut a against each other in pairs, after the fashion of crosiers, whose terminal spiral is turned outside. This is the arrangement that we have mentioned at Neandria and on other archaic capitals (Pl. LII,1,2; LIII,1,4). It is unnecessary to search long to find the model. One finds it in Egypt in the paintings of ceilings and in the columns painted on the walls

of tombs,[4] in Assyria and Phenicia on reliefs on which are represented edifices, on furniture and ivories,[5] at Cyprus on funerary steles.[6]

Note 4.p.659. Histoire de l'Art. Vol. I, Fig. 541-546.

Note 5.p.659. The same.II. Figs. 71, 75, 78, 80; III,612.

Note 6.p.659. The same. III. Figs. 51, 52, 152.

Especially by this last type, men seem to have been inspired at the beginning in Eolia and Ionia; but although rarer, the other type was unable to escape the curiosity always aroused. Did a capital of the sort of that of Boghaz-keui suggest an idea of combining the volutes previously abutting by connecting them either by a right line or a bent curve? Or indeed is it only necessary to see in this progress the effect of the incessant labor of the Greek mind, a sort of organic evolution?[1] It is difficult to decide this matter; but there being given the predilection that the oriental ornamentist had for this form of volute, one can scarcely doubt that its examples were for much in the method taken by the architect among the Greeks of Asia, when he made this motive the essential member, like the ensign of the capital of the column.

Note 1.p.660. One finds the junction made by a straight l line on an Assyrian capital. (Histoire de l'Art. II, Fig. 77).

Primitive Ionic capitals, those of Neandria (Pl. LII,2) a and of Naucratis (Pl. LII,4), have presented to us another element than the volute, the double collar of falling leaves. Whether this collar alone formed a capital or indeed was placed beneath a pair of volutes, this motive is always found employed in the same manner as the terminal decoration of a cylindrical shaft, on more than one monument of Asian art a and notably at the tops of the verticals of a bronze throne, entirely Assyrian in style, that was found in Armenia.[2] From the example of this furniture, one divines how could reach even the Ionians such works of oriental artisans, that were suited for transport to a long distance, and on which the a architect found useful suggestions.

Note 2.p.660. Histoire de l'Art. Vol. II. Fig. 383. See F Fig. 386.

It is not alone by this trait that the Ionic column recalls the memory of what one may call the Asian column. That almost always has its base, whether it be an independent support or a simple pillar. In Assyria a great torus of very heavy app-

appearance alone forms the base.[3] In Persia the torus is placed above either a square plinth or a bell ornamented by reversed leaves;[4] but everywhere appears the torus, the principal element of the Ionic base. In it is a scotia below the torss; now also this moulding is always sketched in the Assyrian base.[5] We find again this torus alone forming the entire base on the pilasters that decorate the angles of the interior of one of the most beautiful ancient tombs of Phrygia of the Sangorios, that which we have called the broken tomb; a simple fillet there separates it from the shaft.[6]

Note 3.p.660. Histoire de l'Art. Vol. II, Figs. 82,86,87,88.

Note 4.p.660. The same. Vol. V. Figs., 309,310,311.

Note 5.p.660. The same. Vol. II, Fig. 85.

Note 6,p.660. The same. Vol. V. Fig. 98.

It is true that the palaces of Persia are very much later than the most ancient Ionic monuments; but it is no less certain that this stone architecture continues the traditions and in general reproduces the forms of an earlier architecture peculiar to Iran, in which wood played the principal part.[1] If this be so, is it by the imitation of a model borrowed f from Greece, that it is proper to explain the analogy mentioned between the profile of the Ionic base and that of at l least a part of the Persian base? Is there not rather a reason to go back to a more ancient type, which for centuries had been in current use in all western Asia? From that common ancestor came in different ways the closely related forms, that are found in both Persia and in Ionia.

Note 1.p.661. Histoire de l'Art. Vol. V. p. 496-505.

Another relation between the Asian column and the Ionic c column is the narrowness and the large number of its flutes. If there be 40 at Ephesus, one counts at Persepolis from 32 even to 52. For the section of these channels, there are two different methods in Asia and in Greece. At Persepolis the flutes are tangent, as on the Ionic monuments of the 6 th century; but in Assyria an altar and a stele already present the model of that fluting bordered by a fillet, which ends by becoming a characteristic trait of the Ionic style.[2]

Note 2.p.661. Histoire de l'Art. Vol. II, Figs. 107,110.

Beside the capital that shows the use of the volute, we have placed another, that we have called the Eolian capital,

Asia Minor, as around the temples of Syria and of Cyprus, with lodgings for the servants of the god or goddess, with wide porticos where the merchants stood, the curious circulated and the believers were stationed; at least this is attested for the temple of Ephesus by the condition of the ruins.

If the Ionian architect appears to to have commenced by employing elements supplied to him by the arts of Asia and by his methods of construction, he at once applied himself to a appropriate these elements and place his stamp on them, to fuse them into an entirety which should satisfy a peoplel w whose imagination had already created the elevated and noble figures of the immortal gods. His principal effort was devoted to the column. He occupied himself in fixing its proportions, profiling the base, regulating the number and section of the flutes, and in perfecting the capital, at first injured by a certain incoherence. We have seen what pains he took to succeed by successive improvements in giving to the volutes the happiest arrangement suited to this motive.[1]

Note 1.p.662. This question of the origins of the Ionic architecture has strongly aroused the curiosity of archaeologists in recent times. We shall not refer to the works of learned men, who were ignorant of oriental art, although one can find curious observations in the Memoirs of Hogg, On the origin of floral Ornaments, the Ionic volute, and the wave line of the ancient Greeks. (Trans. Ry. Soc. Literature. II Series. Vol. II, 1847, p. 179). Among more recent studies, and that are based on more extended information, we shall content ourselves with citing the following works, which have appeared to us especially interesting, either by the views there expressed, or by the choice of the illustrations in them.

Ussing. Die Græske Soile etc. 1894. 82 pp + 53 ills. in text, with a summary in French witt this title. Du developpement de la colonne grecque.

M. Dieulafoy. L'art antique de la Perse. 1884-1886. Part III, sect. 4. (See particularly p. 52, an entire series of ivories from Nineveh and preserved in British Museum.

Puchstein. Das Ionische Capitell. 1888.

Mesplaotte. L'architectura Ionica etc. 1897. 41 pp+ 34 figs.

As for the column and the capital, reasons of sentiment a and of taste were obeyed by the architect; but it was not the

that composed of the bundle of erect leaves, which expands like a basket (Fig. 282, 283). That form likewise appears to be of foreign origin; but is no longer in Asia that its model is to be sought; it is in Egypt. There is a sensible analogy between this type and that presented by one variety of the Egyptian capital, the capital having as ornament a boquet of plams.[3] Particularly the architects of Saite princes appear to have brought this type into fashion; when the Greeks penetrated into Egypt, they found it nearly everywhere in the edifices of the cities of the Delta; they took it there and used in occasion to diversify their arrangements.[4]

Note 3.p.661. Histoire de l'Art. Vol. II, Figs.337,348,349.

Note 4.p.661. Yet is is necessary to state that the calathi form of capital is also found on one of the Phrygian tombs of the valley of the upper Sangarios (Histoire de l'Art. Vol. V, Figs. 77, 97); but the sepulchre on which it is found is one of those to which it is difficult to assign even an approximate date; thus one cannot affirm that this monument is earlier than the Greek monuments, that present examples of the same type.

Further, everywhere except in the Doric style, the forms of the principal members of the architecture are thus derived from prototypes, that must be sought outside Greece, and in the Ionic style it is not the plan of the edifice, so l long as this plan retained its primitive character, that recalls arrangements familiar to oriental art. The Ionic temple has neither the prodomos of the Homeric megaron, nor that beautiful enclosure of columns, that the architect conceived as an addition to make it the Doric temple. To judge of it even by the so recent monuments of the Acropolis of Athens, the Ionic temple at its origin was only a narrow cella, on which columns appeared only to support the ceiling, when supports were needed other than the walls, or to decorate some external facade of the edifice. One feels himself there nearer the Semitic temple, with its sanctuary of very restricted dimensions and the extension that can be made to it by dependances of all sorts, than to the severe verity of the Doric temple. The latter had no annex except the propyleum that g gave access to it. On the contrary, it seems that there were enclosures of vast size around the great Ionic temples of A

same for the general arrangement of the building. Not in the religious architecture of the Orient could the Ephesians and Samians find the model of the temples, that in the course of the 6 th century they consecrated to their Artemis and their Hera. One knows what idea we have been led to form of the p primitive Ionian temple from the later monuments, which have seemed to us to represent it faithfully; now as we conceive this type, it would be poorly adapted to furnish the plan of an edifice, that by its amplitude and dignity would have appeared worthy of the august goddesses. The Dorian temple fulfilled these considerations. With its spacious cella and the colonnade surrounding it, in all Greece it had given satisfaction to the requirements of the piety of the people; men had adopted everywhere this type as that best suited for the dwelling of the immortal gods, and thus the Greeks of Asia were led to inspire themselves by it, when they desired to prove their health and power by the splendor of their edifices. While retaining its forms that long acquaintance had r rendered familiar to the eyes of the Ionians, the temples of Ephesus and of Samos were great peripteral temples.

If from this moment Doric art had conquered this sort of primacy, it is not by the effect of a difference of age. The Ionic style is as ancient as the Doric style. The origins of the latter are lost in the mysterious depths of Mycenaean G Greece; those of the other are to be sought in the old civilizations of the Orient. The first attempts that the Greeks of Asia made to give themselves a national art must date back to an epoch, that cannot be less distant than that in which the Greeks of Europe created the Doric order on their part; but the laaater earlier succeeded in working out its formula, in deriving from its principle an entire system of well connected rules; at the same time to develop it, nothing was borrowed from the practices of foreigners nor from those of a rival style in Greece itself. Indeed for that reason it is the eldest son of the architectural genius of Greece

In these conditions, if one of the two styles must act on the other, the active part cannot fail to belong to the Doric style. As by right of primogeniture, this caused to be felt by its rival the ascendant of its prestige, and by the examples that it afforded, allowed that to complete and enrich

enrich itself, to attain to effects that the style could have never reached, if reduced to its own resources. How this influence was exerted, we have indicated. Not only the general shape of the edifice has it modified by giving it a double pronaos and the portico; we have shown it intervening also in the details to supplement a certain insufficiency, to give more amplitude to certain members of the architecture. Thus it introduced the frieze in Ionic architecture, which was l lacking at its origin. We shall see in the course of this h history this predominance of the Doric style leading to a c curious result,How will come a time when men will seldom build in Greece other than Ionic temples; but even then with the appearance of defeat and disappearance, the type of the Doric temple will continue to live and to impose itself on architects, even in those edifices whose forms will not be its own. All these Ionic temples will be so in a way, only by name and custom. Most frequently will they merely reproduce the plan of the Doric temple with a fidelity almost servile.

In its native country, the Ionic style commenced early to suffer without resistance the influence of the Doric style; but at least it has remained the uncontested master of the ground. For the entire duration of the archaic peeiod, one finds for mention on that coast of Asia Minor, only a single Doric edifice of some importance, the temple of Assos. If not without some peculiarities, this temple represents the art of European Greece on the eastery shores of the Egean sea, it appears, that in this men long abstained from attempting to use the style, which had already made its mark by endowing with sumptuous edifices the most celebrated cities of Ionia. One cannot cite a single example of the Ionic order built before the middle of the 5 th century outside Asian Greece and its colonies; if after the end of the 6 th century Delphi saw aries on its sacred way a little building or treasury, on which the Ionic style displayed all its elegance, this is because the Cnidians that built it, desired to be r represented near the temple of Apollo by an edifice marked by the stamp of the art, which was alone practised in the country that they inhabited. At Olympia the citizens of Gela took a similar method, when it was necessary for them to dec-

decorate their treasury.

Until after the Median wars, this art was then only practised by a single fraction of the Greek race; one can almost call it a provincial artl if this word had a meaning in Greece, and if in the 7 th and 6 th centuries the Ionians had not been in advance of their brothers in Europe, and if they had not then formed the advance guard of Hellenism. It was due to the intelligent initiative of Athenian artists, that it should not remain confined to its hereditary domain, and should finally pass over the Egean sea about 450. Grealty fallen, yet still commercial and wealthy, Ionia was then comprised in the maritime empire of Athens, and was continually visited by its merchants and mariners, by its tax collectors and generals. Thus they were always going and coming from L Lesbos, Samos, Chios, Ephesus and Miletus to Piraeus.

Perhaps those skilful and learned architects had made the journey, Ictinos, Mnesicles, Callicrates, and yet others whose names escape us, that Cimon and Pericles charged to decorate the Acropolis by edifices in harmony with the position of Athens, become the real capital of Greece. Even in Ionia, in the temples of ancient and glorious cities, they had appreciated the graceful slenderness of the Ionic shaft and the beauty of its capital; they resolved to employ it for the d decoration of the field entrusted to them. Ionic forms had until then been employed at Athens only to crown steles, pedestals and statues, themselves most frequently the work of Ionian sculptors; the innovation was to apply them to the construction of edifices, that did not pretend to rival by their mass the majestic grandeur of Doric monuments like the Parthenon, but on which a finer art more lavish in ornaments could exhibit all its resources; there would be materials f for happy contrasts. Further, the Attic masters accepted no liability beyond the inheritance from their Ionian predecessors. When they trace the plans of their Ionic temples, if they had not taken care to use the freedom suited in that respect to the style, whose principle they had adopted, they left to their predecessors the modillions and dentils, a too literal transcript of the primitive structures of wood; they modified the composition of the entablature; without confusing that with the Doric entablature, the former had its div-

divisions, and thus lent itself to receive an additional ornamentation from the hand of the sculptor.

From that moment, Ionic art was transplanted and naturalized at Athens, and ceased to be the exclusive property of t the Greeks of Asia. By the light retouches received from the delicacy of Attic taste, it conquered in all Greece the right to citizenship; it became the second of the styles of Hellenic architecture. Henceforth the monuments of this style multiplied; one sees them arise at Delos, Delphi, Olympia, also in Sicily and Magna Grecia. Further, this was not the sole use that the architect made of this order; also sometimes to vary its effects, he placed the Doric and Ionic in the same e edifice. In such a case the forms borrowed from the Ionic s style played a secondary part; thus in a temple where the columns of the portico and of the pronaos are Doric, those of the interior can be Ionic.

The first example of this sort of hybridization appears to have been given by Mnesicles in the propyleum of the Acropolis in Athens; that example was followed by the architects that constructed the temple of Athena Alea at Tegea, the temple of Apollo Epicurios at Bassae, and much later the propyleums at Eleusis.

By adopting the Ionic order after revision and correction, Athens then conferred on it an importance and dignity, that it had never acquired before, and opened to it a new and more extended career. What Athens thus did for one of the arts of design recalls the influence that it exerted in the domain of letters. There also it gathered the heritage of those Greeks of Asia, that had commenced and essayed all. Ionia had seen arise philosophic and scientific speculation with Thales, Anaximenes and Anagoras; this assumed more rigor and a different scope at Athens with Socrates, Plato and Aristotle; the solutions attained by Grecian thought, and the hypotheses that it emitted are stated in the works that posterity collected and has not ceased to meditate. Historical investigations were inaugurated by those called the logographers, Hellonicos of Lesbos, Cadmos and Hecateus of Miletus, Xanthos of Sardes; but it is at Athens, under the impression of its warlike prowess, that it accomplished for the benefit of all Greece, that a Dorian of Halicarnassus, Herodotus, writes t

the first history worthy of the name. Soon an Athenian, Thucydides, will compose that history of the war in the Peloponnessus, which by the power of reflection and the depth of analysis, is one of the most admirable monuments of Grecian genius. It is the same for the epic and the lyric poetry, those two daughters of the imagination of the Eolians and Ionians; when they have exhausted their vein, they revive in the tragic drama at Athens. The scenes and dialogues of the tragedy replace on the stage in another form the myths and personages created by the epic poetry; its monodies and especially its choruses and odes, in which their pathetic and colored expression find all the feelings that move the soul of man and of the citizen. Thus converge toward Athens and guide us there, all the roads that we have followed in the study which we have undertaken. At Athens has all been arranged, matured and brought to perfection; there and by it was completed the prodigious and lengthy work of birth, of artistic and literary production, which for us commenced at Mycenae, Tiryns, Orchomenos, in Thessaly, to continue with infinite diversity of inventions and efforts in all Grecian colonies located on the coasts of the Mediterranean, and particularly in the brilliant cities of Asian Greece, in that Ionia, that has justly been called the springtime of Greece.

Additions and Corrections.

Page 65. W. Reichel is certainly one of the learned men b best acquainted with the Mycenaean world, and who has studied it with the most sagacity; better than anyone else, he has brought into light traits, which in the tales and scenes of the most ancient parts of the epic poems yet belong to t the civilization of the preceding age, and can serve to illustrate end define the idee given to us by the anepigraphic monuments of the primitive art. Thus one reads with a lively interest the new Memoir that the author of Homerische Waffen has recently published under this title; Ueber vorhellenische Götterculte. 1897. We received it only when our Book XII was printed; thus we cannot profit by all the acute observations and ingenious conjectures contained in it; but in spite of the regret felt for this, we believe that cannot accept all of his theory. We are inclined to think with him, that there did not exist at Mylenae and at Tiryns statues of the deity placed in a sanctuary, and we are grateful to him for having called attention to the cult of the throne, whose tradition was so long retained in Laconia in the cult of Apollo Amyclea, and whose trace also exists in the epithets euthronos, chrysothronos, that Homer so frequently applies to his gods; but it seems to us demonstrated, that the so called prehellenic societies had already attempted to translate by images the religious conceptions, that had formed what has been termed their polydemonism. We have found those images in the figurines of lead, bronze and clay, that have appeared to us to be idols; particularly in the engraved stones that have furnished us with numerous examples. Finally, the epic poetry seems to us to prove, that during the course of the two or three centuries that followed the fall of the Achaian kingdoms, among the tribes whose geniss created the immortal types of the Olympian gods, attempts were already made to give a body to those gods, that men represented to themselves as so noble and so beautiful. We grant indeed, that those attempts must be very timid and very awkward; but we cannot accept the interpretation, that Reichel gives of the verse where the poet relates that Theano, priestess of Athena, placed the peplos offered by the Trojan women "on the knees of the goddess." Reichel understands, "on the empty throne, at the

place where could be found the knees of the goddess, if which was not the case, there had been a statue of Athena seated there." The explanation appears to us as singularly forced; it misunderstands the customs of that poetry, which ordinarily expresses so frankly the impressions received by the senses, and which depicts the chosen scenes by precise and colored epithets. Is it not simpler and more natural to assume there a xoanon, doubtless of very rude form, that all clothed in rich fabrics, like certain of our old madonnas, represented the goddess seated on her throne inliad with gold and ivory.

Here, as also sometimes in Homerische Waffen, the fault of Reichel, so learned and acute, is exaggeration. He too strongly desires to react against the opinions adopted before him; he is too systematic and too absolute. He carries to the extreme, doctrines, that if tempered by certain resources and certain distinctions, would be the truth itself, and would be imposed on criticism.

Pages 114, 115. concerning the dogs that the epic poetry substitutes for sphynxes or lions as guardians of the doorway, see what M. Pottier writes:- "I have always been surprised," he says, "by those dogs that guard the doorway, and I have asked myself if we do not have there the result of a bad interpretation, made by a Greek, of monuments of an Asian character, monuments that in reality represented lions of panthers; on the Corintnian vases themselves, those animals sometimes have the appearance of dogs. I will mention to you a more typical passage relating to the chyon. In the Odyssey (XIX, 228) is a mention of a dog, which uith his forepaws h holds a dying fawn. Here the improbability is still greater. a dog does not hold his prey between his paws; this is rather the attitude of a feline animal, and the image of a wild beast holding in his paws a slaughtered fawn naturally recalls the idea of numerous oriental works of art, the more that in the passage of Homer it concerns an embroidery of a mantle, and that one knows how much the Greeks admired and sought for fabrics woven on the loom or embroidered by the needles of Syrian women. Then I would see in these two passages an allusion to a work of oriental art, certain details of which had been badly comprehended by the Greek epic poet."

Page 149, Figs. 28-81. In regard to these dolls in the form of bells, M. Pottier stated to me, that they resemble the s sort of little idols, that one sees on the famous bezel of a golden Mycenaean ring (Histoire de l'Art. Vol. Vi, Fig. 425), on which they have the appearance of being suspended in space. It seems that there is a relation to be noted, like that of the great shield with notches, between the Mycenaean epoch and that of the Dipylon. It is probable that thhere was retained in the costumes of women the custom of employing pieces of cloth, which gave expanded petticoats in the form of bells, an arrangement that modelers in clay expressed even more naively in their figurines, than the engravers of intaglios had done in the preceding age.

Page 170. In reference to the bent cross or swastika, one will consult with benefit a recent work- Wilson, T. The swastika, etc. 1897. No theories are there. The author makes no effort to discover the signification of the symbol, the different meanings that it might assume among the different peoples that employed it. He desired to present particularly a collection of facts and figures; he especially emphasizes the presence of the swastika in the New World.

Page 206, Note 5. To the the works that we have cited in regard to a primitive geometrical style much earlier than t the pottery of the Dipylon, add a study by S. Wide. (Athen. Mitt. XXI, p. 385-409, Pls. XIII-XV). There is given an account of the discovery of a group of tombs in which were found vases with incised geometrical ornamentation, which belonged to the most ancient times of the Mycenaean period, and that represent a rural art contemporaneous with the royal art, f formed under foreign influences, to which is due what is termed Mycenaean ceramics. The author sees in that rural art t the ancestor of the rectilineal geometrical styce, whose wisest form is the style of the Dipylon. He rejects the idea that the Dorians contributed to introduce into Greece a new style, derived from the bronze civilization common to all t of central Europe. M. Wide does not share our idies on this subject; but one will no less appreciate the data, that he h has collected on this rudimentary ornamentation, that was c certainly used in Greece before the arrival of the Dorians.

Page 208-209. To our observations on the persistence with

which were retained certain Mycenaean motives in the art of a later age, one can add the remarks of S. Wide. Nachleben mykenischer Ornamente (Athen. Mitt. Vol. XXII, pa 233, Pl??).

Page 258, Note 1. We have given a very full analysis and appreciation of Reichel's book on Homeric Arms in the Jour. des Savants. (Dec. 1895, Jan. 1896).

Page 259. With regard to the mitre, see the Article of M. Perdrizet. Sur la Mitre Homerique. (Bull. Corr. Hell. 1897. p. 169-188, pl. X, XII). perdrizet understands the mitre as Reichel did, and he finds an example of it in an unpublished bronze of Delphi, that his plates represent as seen from front and side. The statuette is 7.55 ins. high; it represents a nude and beardless youth, who wears on his skin between t the chest and abdomen a sort of wide belt. The same indication is found on other figurines of the same kind, not so well preserved, that were collected at Delphi. The statuette would date from the beginning of the 6 th centory. Already worn in the Mycenaean epoch, the mitre then remained in use long after the time of Homer.

Page 361. Insert in the title of Figs. 186, 187, instead of "and that of the naos," read "and that of the portico."

Page 486. Line 8. Instead of "temple", read "temple R."

Page 523. The machines employed for hoisting and setting blocks of large dimensions are mentioned in the accounts of the construction of the temple of Apollo Didymeus. One of t these appears to have been a shears. There is a mention in the same textof inclined planes, "on which have been raised the two statues, and the stones of the pedestal were transported." (Haussolier. Temple of Apollo Didymeus in Revue de Philologie. 1898. p. 47-48.

Page 550. one of the most recent studies on the subject of the proportions of Greek temples is the Essay of M. A. Marquand, entiteld: A Study in Greek architectoral Proportions. The Temple of Selinus. (Am. Jour. Archaeol. 1894. p. 521-528). Also see an Article by Dörpfeld. Die Proportionen und Fussmasse Griechischen Temple. (Arch. Zeit. 1881. p. 261-270).

Page 598. Among the monuments of the 6 th centsry that later rebuilding has caused to disappear, it is proper to mention the temple of Athena built of tufa, which was replaced in the 5 th centory by the marble temple, whose columns are

still standing on cape Sunion. Its remains were found by Dörpfeld. (Athen. Mitt. 1884. p. 324-337. Pls. XV, XVI).

Page 604. Vitruvius (preface to Book VII) speaks of the Heraion of Samos as of a Doric monument. There is either a slip of the writer, or an error in an early copyist. There can be no doubt of the name to be given to the great Ionic edifice, whose ruins are yet to be uncovered, but whose perimeter has been measured, concerning the temple whose column we describe; it was certainly the temple of Hera, the glory of Samos. There have been found in the vicinty fragments of a building of the Doric order; but that seems to have been much less important; its order is at a much smaller scale. In the accounts of the temple of Apollo Didymeus the frieze is not designated by the ordinary name of zoophoros. It is there named by a word not yet found either in writers or in inscriptians, chosmophoros, "that bears the ornaments." This term is as well formed as zoophoros, and is better suited for most Ionic friezes, where the surface is not decorated by living figures, but only by foliage, flowers, palmatiums, etc. (Haussoullier in Revue de Philologie. 1898. p. 49.

Page 423. Fig. 215. Instead of "internal column of the temple of Demeter," read, "internal column of the Basilica."

And in line 37; instead of "in the temple of Demeter," read, "in the basilica."

ALPHABETICAL INDEX.

PLATES WITHOUT TEXT AND VIGNETTES.

I. Plates without text.

II. Plates in text.

Fig. Table of figures and plans inserted in the text. Page.

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THE END.